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SPEECH DEFECTS IN SCHOOL CHILDREN AND HOW TO TREAT THEM

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IN MEMORY OF A WISE SYMPATHY
CONSTANT INTEREST AND
CHRISTIAN GUIDANCE
I DEDICATE MY FIRST BOOK TO
MY MOTHER
ISABELLA BABCOCK SWIFT

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EDITOR'S INTRODUCTION

The school system has grown increasingly flexible during the last twenty years. Its effort to adapt itself to the peculiar problems of special groups of pupils constitutes one of its most substantial achievements in efficiency. Special provisions for the deaf and dumb, the blind, the tubercular, the crippled, the mentally defective, and the exceptionally gifted are among the means now employed by large school systems to equalize educational opportunity. In each case initiative has been stimulated the moment the facts of a particular neglected need have been adequately presented to the school administrator. Then experiment ensued, followed by the garnering of experience's best results. Once the program of practical procedure has been evolved, special teachers have been trained for the new responsibility. Within a decade, what was once a new and somewhat startling innovation has become a completely accepted tradition of the schools. This has been the history of every type of special instruction now included in the school organization.

At this moment we are aware of another specialized responsibility, one to which schoolmasters have been more than half-blind — the correction of radical speech defects. In spite of all our theoretic intent in the teaching of reading and elocution, we have done nothing for the unfortunate group of stammerers and stutterers always found in the school system. At best such methods as have been employed in these traditional studies have been without basis in scientific diagnosis and treatment. In consequence they have been worse than futile. They have merely permitted the social and vocational handicaps of the afflicted to persist and become aggravated. The day when we may continue this policy has passed. We have become sensitive to our neglect and failure and we are ready to adopt a program for the pedagogical care of speech defects. Already we face a demand for accurate information upon this subject. More, we are asking for practical scientific methods in the reconstruction of the speech habits of our children.

As is usually the case, the attempt to deal with markedly pathological conditions finally focuses attention upon minor disorders that usually escape notice. For a long time Americans have been told that they possess unpleasant voices. The

monotony, the harshness, the nasality, and the slovenliness of American speech have often been called to our attention, most frequently by those who suffer the sudden contrast and revelation of coming into our midst after years of life among those British and Latin peoples who have evolved a more congenial set of speech habits. These lesser handicaps, æsthetic, at any rate, have likewise become part of our educational problem and consequently part of the responsibility of every school teacher. For the efficiency of every American classroom teacher, as well as for the better development of special teachers of correct speech, the editor offers a volume of facts and methods on the correction of speech difficulties. It is with a great sense of relief that we save the more conscientious of teachers the baffling task of trying to collect essential wisdom from scattered medical and pedagogical treatises upon this subject. It is with a confident sense of service that we present an invaluable work by an eminent medical specialist with experienced insight into pedagogical ways and means. So much practical information on speech correction has never before been made accessible to teachers in such handy form.

SPEECH DEFECTS IN SCHOOL CHILDREN

I

IMPORTANCE OF GOOD HABITS OF SPEECH

Speech and its excellences and defects are more a matter of habit, more the impress of our environment, more due to the speech we have persistently heard, than we realize. Observing habits of bad utterance years after they have become ingrained, we are apt to lose sight of the long periods during which they have been running and to look upon them as matters of the present moment alone. This, however, is not only a superficial but a false view of the matter. If our results are to be at all trustworthy, we must learn to consider every speech problem that presents itself in what may be called its historical aspect. Methods used for eradication of bad habits of speech must be based upon a knowledge of the way in which those habits were formed. It will be well, therefore, to consider some of the habits of early childhood before turning to the broader aspects of our subject.

1. Speech habits of childhood hard to eradicate

As we review the history of speech disorders through the long years of their persistence, one of the first things that we discover is the difficulty experienced in their eradication. Speech defects are always *hard to cure.* This difficulty may be illustrated in numerous ways. Recall the foreign accent that remains with some people and marks their every utterance. A foreign accent is often one of the most difficult things to live down. It is sometimes impossible to cure. It gives a good illustration of the difficulty of eradicating bad habits planted in early childhood. Again, consider the faulty pronunciation of the letter *s* which we call the lisp. This is simply one of those bad habits started in childhood which has persisted for years without being eliminated, without being outgrown, and all the years of faulty pronunciation have so deepened this faulty utterance that eradication is made *very hard;* in fact, the difficulty is so great that one speech teacher has said that it takes a year to eradicate a marked lisp. Compare this to the eradication of other physical defects, such, for example, as the medical man removes by opera-

tion or by a short course of medication. Speech disorders are very hard to cure in comparison with other more or less quickly removable defects of the body.

We often find faulty enunciation of a number of utterances or sounds. The difficulty of cure is proportionately increased. An illustration of this fact is seen in that all too frequent form of speech disorder known as "baby talk." This is simply the persistence in the *grown person* of a number of phonetic defects that the mother has implanted in her children by talking "baby talk" to them. (I have known cases that persisted to the *age of twelve and fifteen!* Most frequently these cases were eradicated before the age of eight years, but occasionally they last longer.) In proportion to the length of their persistence is their depth of impression, and also in exactly this proportion is the difficulty and hardship of their eradication.

In this connection should be mentioned unclear speech. I mean by this, not an obvious phonetic defect, but a general lack of clear distinct utterance. This, too, may be classed as a bad habit started in childhood and carried along for years without any attempt at eradication. It is just as hard to eliminate as any of the other

habits of speech mentioned above. We might also mention the child's imitation of its parents' slovenly speech. Slovenly speech acquired in the yet tender years may take a long time to replace by that technically exact and clear-cut utterance which is so charming in the finished conversationalist.

Bad grammar is mostly a matter of ear, and may be classed, as to hardship of eradication, in the same category with the smaller and less obvious defects mentioned above. Some ungrammatical habits of speech are so deeply fixed that they are hardly susceptible of eradication. Thus we see that without exception early speech habits are *hard to eradicate.*

2. Some become permanent defects

It is well, in these introductory remarks, to emphasize the fact that bad habits of speech may become fixed and well-nigh ineradicable. When we instill the fear that a speech disorder may become permanent, then we give a powerful incentive to early treatment; we give a weighty reason for initiating methods of prevention.

Foreign accent becomes permanent. Slovenly speech may cling to one throughout life. "Baby talk" occasionally lasts over into the years of

adult life. These observations are seen to be truisms when we study the past histories of those who are troubled with speech disorder. But we are not likely to realize that whenever these defects start, they are always likely to become permanent. It is the idea and fear of this permanency that I wish to instill.

I need scarcely mention the opinion of some persons that a permanent speech disorder may be an "ornament." A lisp can no more be an "ornament" than any other defect, such as a twisted finger, a skin birthmark, or a crippled foot. Yet I know of one individual, an author, who considers that her lisp is worth retaining as a personal ornament. She would not remove the defect under any circumstances. Of course, such individuals are outside of our consideration. We can only trust that they will outgrow their standards of taste when they come to realize the greater pleasure and the greater excellences to be derived from exact and perfect speech.

Bad as a permanent speech defect may be in itself, it is still more serious in its effect upon the life of the sufferer. As long as it persists, it deprives him of much of that success in life which he might otherwise attain. For example, entrance upon some kinds of business is abso-

lutely impossible as long as the permanent defect lasts. As we come more definitely upon this subject of the relation of the speech defect to the individual we shall see more definitely how speech defect deprives one of advantages.

3. Defective speech marks the inefficient worker

Efficiency is the order of the day. The advice of efficiency experts is being considered in the management of all sorts of business. Now, the man with speech disorder falls most assuredly into the class of inefficient workers. He cannot deal clearly, quickly, and adequately with the people with whom he comes in contact. His faulty speech makes it impossible for him to externalize his own conceptions so as to satisfy those whom he serves.

One or two practical illustrations of inefficiency may be cited here to show how greatly speech disorders affect one's efficiency, to show the necessity of their elimination, and to show how this elimination opens up fields of opportunity hardly thought of before.

Let us first look at some of the fields of work where permanent speech disorder precludes success. The mere mention of these will be enough to show us that an individual is debarred from

them by speech disorder. For example, take the ministry. The stutterer cannot possibly succeed in this field. The person who has a few speech defects, a foreign pronunciation of vowels, or a foreign accent, becomes a burden to his hearers. Again, the clerk in a store must not only have a pleasant manner and good command of English grammar, but she must have a standard of speech utterance that attracts no attention to itself. Then there are almost innumerable other situations where an easy flow of speech free from disorder is almost the first requisite.

All this leads us naturally to the conclusion that speech disorder in the adult results in an absolute exclusion from numerous fields of work, study, and business, or, at least, renders him absolutely inefficient if he tries to enter them. This indicates that the same defects, even where they do not show so clearly, make for inefficiency just as certainly.

The sufferer with speech disorder, then, is an inefficient worker. He is a burden to society and a hedger who seeks to do that work in the world in which his defect and disorder will count least against him or will show up least clearly in his dealings with his fellows.

In a time when we are striving to uproot in-

efficiency in all its forms, striving to bring every individual to the maximum of his powers, should we not, then, give close and special attention to this matter of speech disorder? We have seen that it is hard to eradicate, but we have also seen that unless it is attacked in time there is grave danger of its becoming so ingrained as to be scarcely susceptible of cure. Once it has become fixed and ingrained, moreover, it is a most serious deterrent to success in any walk of life. These considerations make it clear that the correction of defects in speech while there is yet time should constitute one of the important branches of education.

4. Social success dependent upon speech

The social success which I have in mind at present is not that which is sought by men and women of the *beau monde*, it does not depend upon one's wealth or the number of his acquaintances, it has no connection with Vanity Fair. I speak only of that social success which is shown by one's ability to mingle easily and freely with other people in any walk of life in which the social relation is demanded.

We know that our apparel should not attract attention; we know that our deportment should

be free from eccentricity. We should maintain this same quiet and unassuming excellence in our usual conversation, in our habitual utterances, in our modes of conversational communication. We should cultivate an easy and natural flow of utterance that accomplishes its purpose without in any way calling attention to itself. Those with marked speech disorder cannot attain this conversational excellence. Some of the worst forms of speech disorders, indeed, cut one off from all social intercourse whatsoever.

5. Bad habits of speech impede education

One of the most obvious, far-reaching, and serious results of speech defect among young people is the interference which it causes in their education. Expert examiners commonly find that children with defective speech fail to keep pace with other pupils in their own grades where they are under teachers who are ignorant of how to eliminate that defect. It is less common but vastly more important that pupils with speech disorder fail of promotion. Pupils that have brought all the rest of their school requirements up to the standard that would warrant promotion are kept from promotion by some marked speech disorder and by this alone. There are more numerous

cases of this sort than we have any idea of. This is not the place to discuss the question whether such pupils should be promoted or whether they should be kept back. I merely want to call attention to the facts as an illustration of the way in which speech disorder impedes education.

There are still worse cases than this. I have in mind a stutterer who became so nervous from his speech defect that even his physician wanted him removed from school. There was no treatment undertaken in this case. In fact, no effort was made to relieve him of his difficulty. His education was not merely impeded, it was stopped altogether. Such cases are not numerous, but they are numerous enough to afford another illustration of the importance of our subject. We even find numerous children whose defective enunciation or total lack of speech does not hinder or impede their education, but prevents it at the very start.

The teacher is not to blame for the impeding of education by speech disorders if the superintendent's system provides no means of training her in the elimination of them. Surely she cannot be blamed for failing to promote defective children. The defect itself prevents her from getting the proper evidence needed for promo-

tion. But when there is a retardation of two or three years, it is time for her to look about and see if the trouble is not eradicable.

There are usually deep-lying causes of speech defect which elude ordinary observation. We are too apt to think of speech defect as a matter of mouth utterance only. We pay too exclusive attention to the mere speech product. There is very much more than this to the speech mechanism, and the causes of speech disorders often lie back in the mental processes of intake. A frequent cause of speech defect is found in the sufferer's inability to hear properly. It is clear that faulty hearing would make it difficult to reproduce properly the sounds of speech. Speech defect is not usually a matter of enunciation alone. It usually includes a defect on the sensory side or an inability to interpret sensory registrations in a reliable way. The faulty product comes from lack in sensory control.

Defective utterance is really a very small part of the whole problem; it is, in fact, hardly a part of the problem at all. In a larger sense it may be called only a symptom of the problem. This is because, as we have just seen, the external speech defect may be interpreted as a mere sign or symptom of a deeper defect on the sensory side of the

speech mechanism, the mental intake side, in some complex or in the interpretative or thinking side; and merely in consequence of this deeper defect do we have the faulty vocal output, the inability to externalize, the mistakes of utterance, and the permanent speech defect.

II

METHODS OF CORRECTING DEFECTS OF SPEECH

After this discussion of the constant and crying need for correction of speech disorders in public schools, — a need which in many places is not noticed and in other places is not met, — we come naturally to the consideration of methods of eradicating these defects.

The methods and systems of cure should be uniform, scientific, and based upon a sound psychology. Members of the medical profession who have gone out from Boston clinics to establish centers of instruction elsewhere in the country are doing much to standardize treatment, but unfortunately elsewhere there is still little general agreement. The methods of eradication which are taught — particularly in the institutions of higher learning — are still numerous and varied.

It will be well to begin with a brief but careful consideration of some ways of approaching the problem.

1. Some general methods — dividing classes

In general, the speech-disorder problem resolves itself into an attempt to raise the faulty into the normal voice, to eradicate speech defect and replace it by normal speech. One reason why so many of the weaker efforts made in this line result in only partial eradication lies in the fact that speech as a whole has not been understood. It is very important in studying methods to have a large idea of the field. I mean by this that we should abandon the usual narrow interpretation of speech defects and learn to view the speech mechanism scientifically and as a whole embracing the nervous system in both its physiological and its psychological aspects. In this view the mouth, which is usually the only factor considered, becomes merely a part of the external speech mechanism: lungs, throat, vocal cords, mouth, nasal cavities, and the intricate system of muscles that control these parts. Outside of this we have much more: a sensory nervous system and a low brain sensory registration area, a higher brain interpretation area, and intricate collaborative functions. On the motor side we have a high motor-control area, a low motor-output area, which includes the nerves that go down to supply nervous control to

the numerous external parts of the speech mechanism. All this, then, is the field of approach, all this is our field of study, all this is the groundwork upon which we are to build perfected speech, and no one, without a thorough understanding of *all these things*, can expect to do very much with the speech mechanism. These considerations show the extent of the ground upon which our efforts are to be directed.

A few general ideas of method should be firmly fixed in the teacher's mind and should pervade all her efforts and undertakings in the details of treatment. The first of these general ideas is that of the great importance of persistent, long-continued drill. My two clinics in Boston illustrate some very remarkable cases of improvement. The secret of this improvement lies more in the persistent and long-continued drill gone through in these cases than in any other one thing. We often think that the mere placement of an external speech part where it ought to be is enough, but those who are experienced in this line of work have found that very long persistent drill is the only means of attaining permanent results.

The patient should be held to the exact following of exact instructions. He should not be allowed to lapse, to practice wrongly, or to practice

in a slovenly way. He should be constantly made to do his best.

It goes almost without saying that special attention must be given throughout the period of training to matters of hygiene. The aim should be to secure proper rest, exercise, and nutrition, so that the attainment of new vocal habits may progress as rapidly as possible.

Special attention must be given also to the proper division of classes. Speech defects differ in their characteristics, in the time necessary for eradication, and in their nervous or psychological background. They natually fall into the following three large divisions : stuttering, phonetic defect, and the speech of mental defectives.

2. Modern treatment of stuttering

In speaking of the *modern* treatment of stuttering, I refer to that one which has been found, after numerous trials, to be the best in its final results. It not only eliminates the trouble itself in a majority of cases, but it develops the mentality of the patient at the same time and leaves him with a more rounded personality than other methods even pretend to give. As far as I know, no other method makes any effort to apply developmental psychology. Other methods partly re-

lieve, sometimes wholly relieve, the stuttering itself, but they never give the patient a larger mental horizon, they never try to send him out a larger personality, they never make an attempt to broaden, deepen, and widen his visualization processes. When a method can not only cure stuttering, but can also develop personality, it has claims which no other method can put forward.

Before presenting the modern method of treatment, it will be well to say a word about some of the old methods in order to show the contrast in procedure and in point of view. The oldest form of treatment of which I know was that in which the physician attempted to cure the stutterer by the amputation of a part of the tongue. This was placing the diagnosis in the external speech mechanism. After this the diagnosis was placed in numerous parts of the nervous mechanism on the sensory-motor side. Not long ago some of the lesser lights in the Freudian constellation placed the diagnosis in the subconscious mentality.

After I had made a study of this situation, the only unexplored field seemed to me to be that of the conscious mentality. I therefore began a series of researches with the attempt to discover something constant behind the stuttering in the conscious mental make-up, and it is upon discov-

eries made in the voice clinic of the Psychopathic Hospital in Boston that the modern treatment is based. Let us turn now to that.

Several normal individuals were tested with a list of some fifteen hundred questions to ascertain the conscious content of their minds during utterance. This conscious content was found to be a visual image. Then a similar series of stutterers was put through the same experiment and it was found that they constantly lacked this visual image while they were stuttering. Upon this research finding is based our treatment, which, in a word, consists in very gradually developing first meager and then larger and then very extensive visualization processes over the speech of the stutterer and so giving him that apparently essential faculty which is found constantly present over the speech of the normal individual.

From this general idea as to the foundations of the modern treatment, let us pass to the steps used in initiating this treatment. We begin with a series of breathing exercises. These are intended to instill control of the breath and to develop concentration. After this, the patient is asked to hold the voice on a single musical note or tone during the prolonged expulsion of the breath. Then, in addition to holding this note, he

is asked to pronounce a word. After this, he is asked to hold the single note through the pronunciation of a sentence and of a stanza. This method is continued until the patient has developed sufficient concentration to hold the single note over quite long sentences. We next explain that the holding of the note with the voice is only an exercise in developing the power of concentration and nothing more than an introduction to the really important process — that of holding a visual image in the mind during utterance. After this has been explained and we think the patient has developed enough concentration to warrant our passing on to the exercise of the mental image, we begin with single words and proceed gradually to the use of short sentences, long sentences, verse and prose, short original stories, and long pieces of dramatic literature, until we have developed elaborate visualization processes to the more or less complete elimination of the stuttering habit. Uninterrupted suggestion accompanies these steps.

With this brief statement of the method which is employed, let us turn to the detailed exercises that are given in series from the beginning to the end of the treatment. The object of most of these exercises is to draw the attention

from the words to be pronounced toward the notes held in mind and afterwards to the visual pictures.

Exercises

Position. Correct standing position, heels together, chest up, chin in, body straight, hands to the sides.

Exercise 1. Take a deep breath slowly and exhale as slowly as possible. The inhalation and exhalation should be through the nose. At the same time the arms are raised during inhalation till the hands touch over the head and lowered slowly during exhalation.

Exercise 2. Same as Exercise 1, but on exhalation sound the syllable "Ma," keeping it of even volume and intensity and prolonging the utterance as much as possible.

Exercise 3. This is the same as Exercise 2, but instead of prolonging the "Ma" on an even pitch sing the scale with "Ma."

Exercise 4. Same as Exercise 3, except that "Ma" is sounded on low C, high C, and low C again prolonged as before.

Exercise 5. The word "Mother" is now uttered. The voice is made to move up and down the octave at about the speed of normal conver-

sation. This ends the introductory exercises. The purpose of all these is to concentrate the attention on a mental note.

Word exercise. The patient is asked to apply this octave exercise to every word of the following stanza:

"Mary had a little lamb,
Its feet were white as snow,
And everywhere that Mary went,
The lamb was sure to go."

Line exercise. When the patient has learned to execute this bit of vocal drill with fluency and ease, I teach him to jump the octave on the first word in the line, and then to let the voice run down the octave through all the succeeding words of that line until the note from which he started is reached. The stanza used in this exercise is as follows:

"Twinkle, twinkle, little star,
How I wonder what you are!
Up above the world so high,
Like a diamond in the sky."

Following this, I teach him to rise through the octave from the beginning to the middle of the line and then to let the voice fall gradually to the end of the line. The words on which the high note is struck are "glorious," "grass,"

"shine," and "twinkle." For this exercise I use the verse:

"When the glorious sun is set
And the grass with dew is wet,
Then you shine your little light,
Twinkle, twinkle all the night."

I usually follow this by having the patient tell stories with a vocal execution like that used in the three last exercises. He first tells a story in short sentences, the pitch of the voice rising and falling with every word until the end of the sentence is reached. In the next story his voice is to leap the octave on the first word of the sentence and to decline on the rest. Finally, he tells a story with the voice taking the octave jump on some important or easily emphasized word near the beginning of each sentence and then declining on the following words. This series of exercises with short sentences might be followed by a similar series dealing with stories in longer sentences. This sort of exercise is kept up until the patient has acquired fluency and ease in applying it to any new thing that he tries to learn, say, or repeat. The process is suggestive.

This drill really marks and ends the introductory phase of the treatment, and after there is sufficient concentration developed to hold this

note and apply it consistently on all sorts of material, I start the patient on the processes of visualization. First, I ask him to take some single word and utter it with the visual image naturally called up by that word distinctly in mind. Then he does the same thing in pronouncing a sentence, verses, prose, original stories. By these stages he gradually develops until he can render some pretty complicated dramatic pieces.

This description of the method is almost enough to enable one to start in and carry it out, but for fear that some may need to have a series of exercises put down, I will give a series which I have used in my own practice.

The first selection for visualizing is usually the word "builders." I try to secure in the minds of my patients as clear and fine a picture of builders as possible, and I let this stand as the example and ideal for visualization processes in the work that follows. Next I turn to a sentence.

> "Under the spreading chestnut-tree
> The village smithy stands;
> The smith, a mighty man is he,
> With large and sinewy hands," —

is a very good verse for a wider and more difficult application of a visual image exercise. I train the patient to see the tree in his mind's eye

before he begins to pronounce the word "tree," to hold that tree in mind while he is saying the word, and, when he comes to the description of the blacksmith, to replace the picture of the tree by a picture of the smith standing at his forge under the tree.

"The Chambered Nautilus" is another good verse to practice on, as it is pretty thickly studded with numerous and quickly changing visual pictures.

The "Witch Scene" in *Macbeth* is another good piece that may be used here. It runs as follows:

1. Witch. Where shall we three meet again?
In thunder, lightning, or in rain?
2. Witch. When the hurlyburly's done,
When the battle's lost and won.
3. Witch. That will be ere the set of sun.
1. Witch. Where the place?
2. Witch. Upon the heath.
3. Witch. There to meet with Macbeth.
1. Witch. I come, Graymalkin!
2. Witch. Paddock calls: Anon!
All. Fair is foul, and foul is fair,
Hover through the fog and filthy air! (*Exeunt.*)

After these one may feel at liberty to choose whatever extracts from literature seem desirable. One of the best ones of which I know is the "Dagger Scene" from *Macbeth*, and another one

is the "Mad Scene" in the same play. Suggestion dominates the whole process.

The modern method of treatment for stuttering has been clearly outlined above, but I can conceive that some who misunderstand the background of this method might apply the exercises without reaching the results. I therefore advise some little experience in applying this method in the clinic or some observation of the process as practiced either in the clinics in Boston or under some of the numerous teachers who have graduated from the Boston courses and become centers of instruction in other parts of the country. I do not advise this because the method is particularly difficult. I think it is no more difficult than the proper teaching of reading in the schools. Teachers are not allowed to give instruction in reading, however, unless they have passed a normal course in the subject. Therefore I should most seriously recommend at least a little "trying it on the dog" before the method is tried on the pupil.

Now for the school application of this method of treating stuttering. I might say that the whole class for stutterers should be put through in unison, perhaps as far as the second stanza, of "Twinkle, twinkle, little star!" starting at the

beginning of the year with only one or two exercises and adding one or two a week. It takes from two to three months to get through this second stanza. When the class can do any given exercise well in unison, I would spend the rest of the study period with individual treatment, giving each what his own individual case seems to demand.

3. Treatment of phonetic defects

Phonetic defects are departures from the local standard of the sounds of vowels and consonants. They are as numerous as are the phonetic utterances included in our language, multiplied by about ten or more to cover the different forms in which the defects appear. Some systems study minutely the form of the individual defect and try gradually to get the patient out of it. Others try to instill the correct mouth positions at once, with no other sort of exercises whatever. The best method differs somewhat from these, and is really a larger and more fundamental attack upon the whole process of phonetic utterance than any of these above processes can ever possibly pretend to be.

The method of phonetic correction may be considered under four large divisions: (1) Mus-

cular development; (2) ear sensitiveness; (3) form of motor output; (4) position of motor output. I mean by these, briefly, as follows:

Muscular development as a basis for phonetic excellence is brought about by a systematic drill of all the muscles of the jaw, mouth, tongue, and throat. The purpose of this drill is to increase muscular control and thereby to increase the patient's ability to make exact and minute vocal coördinations. I consider this the most valuable of all possible foundations for the development of correct phonetic utterance.

The development of *ear sensitiveness* enables the patient to differentiate accurately one sound from another, and also to differentiate between sound forms such as pitch, intensity, and other factors in vocal utterance. I hold that defects in phonetic output may have their seat in defective phonetic intake. Sounds ill-heard are likely to be ill-pronounced. When intake is perfected, it provides a good basis for the perfection of output.

By the phrase, *form of motor output*, I refer to the idea of an acoustic form which may be held in mind without utterance of the sound to which it corresponds.

I consider that concentration upon the sensory ear intake, and the development of that con-

centration into the ability to hold the form of a sound for motor output, offer excellent training in the development of final phonetic excellences.

Under the heading, *position of motor output*, I teach the exact coördination and position of external vocal agents — tongue, jaw, teeth, lips, and throat — in the execution of a sound held in mind. Exercise in exact coördinations of motor output and in ability to hold these in the mind and to correlate them with the form of the acoustic idea is an essential process at the very foundation of all good speech instruction. We must acoustically experience good speech, to have it.

4. Management of the special class

The author was the first to formulate a program for a speech survey among special classes for the retarded, and to follow this by the compilation of a course of lectures, attacking the speech problem among mental defectives, illustrating the successful and in many cases marvelous results that have come from a special vocal drill applied to pathological minds and speech cases.

The great mistake commonly made in treating the speech of mental defectives has lain in the application to them of methods proper only to

the treatment of normal pupils. We place these pathological mentalities in classes of their own, where they do not have the usual educational curriculum and are put to what is called "industrial drill" — a vastly inferior method of education. Why, then, should the phonetics used in classes where minds are average be applied, with any expectation of valuable results, to special classes where minds are in many ways markedly inferior? The situation is ridiculous, unscientific, unpsychological, ill-advised, — a work of the ignorant attempter.

The ideal system of phonetics for pathological minds is one that differs as markedly from normal phonetics as industrial drill does from the work in the normal grades. In other words, to reach the mental defective, we should take at least as big a step down from the phonetics proper to normal minds as we do in passing from normal grade work to industrial drill. This is what I have done in devising a new system for the phonetic training of the mentally deficient.

The mental defective is first put through a series of tests to see how much he can utter. I have him say the vowels, thus: "Ah, a, e, aw, o, oo." When he has said them separately, I note how many he can say in series. Then I have

him practice them, first those that he can say in series, for ten or fifteen minutes three to five times a day, for one week. My next step is governed by the advance that has been made during the first week. Sometimes I have him repeat the first exercise for another week. Sometimes, when the patient was originally able to say only two vowels, I add three to those he can already pronounce. Or I may add six in series, when he has previously been able to say three in series. Then I have him begin with some consonant that he has *already* learned, and place that before each vowel. After this I have him pass through several other consonants that he already knows, and have him place each before each vowel. Then I have him place the same consonants after each vowel, and finally before and after. In this way I give him about one new vowel or vowel combination a week, insist upon intensive, constant, and prolonged drill, and then continue the process, making it more and more complicated as it advances. If these exercises are carried on for two or three months, a great deal of improvement results. With these I have known a mental defective in eight months to advance two years on his Binet scale.

I go on to familiar words after this and then

to very short sentences, then to longer sentences, and finally to verse and prose, with the installation of visualization processes. The whole process is nothing but an increasingly complex arrangement of simple phonetic utterances. Each step in the process is minutely adapted to the capacities of the mental defective. It is not suggestive therapeutics.

5. How parents can help

One of the most important and valuable adjuncts to speech-improvement classes is to be found in coöperative influence of the family. The parents should be called in soon after their child has been put in any class for the elimination of speech defects and should be given a careful explanation of the dangers threatening the child because of his speech disorder. They should be shown that the child is likely to be kept back in the grades and to become a laughing-stock among his fellows unless his defect is cured. The strong likelihood that this defect, unless cured early in life, will become a permanent handicap in later life, resulting in retarded education, lack of friends, low pay, and general inefficiency, should be clearly presented to them. It should be made clear that the object of the speech teacher and

of the assignment of the child to a speech-improvement class is simply that these dangers may be averted. This explanation will inspire interest at home, will induce the parents to see that drill and practice are carried out, and will enable them to help in many other ways.

I should also call the parents in later at frequent intervals so that they may observe the child's progress and report upon his faithfulness in practice at home. At the same time they may be influenced again to help in whatever is being done for their child in the class.

More than in any other way, the parents can help in overseeing the hygienic measures necessary to any real speech improvement. They can see to it that the child does not play too hard or too much; they can see that he gets the proper amount of sleep; they can maintain a diet of normal and advised standard and amount; they can look after the clothing and the baths, and minimize the outside work that some children are forced into, which saps their vitality to such an extent that no good work in phonetics can possibly be done with them.

Sometimes progress is found to be quite impossible unless family coöperation — the sympathy and good-will of the parents — is obtained and

maintained throughout the whole period of treatment. This matter is of great importance. It may make all the difference between success and failure.

6. Function of the school physician

The teacher of speech disorder should endeavor to elicit the interest and the services of the school physician. The aid furnished by him may be invaluable to the teacher, mostly in the way of eliminating those physical causes of speech disorder which, with her lay training, she is incapable of finding. The school physician can tell when a *tic* — that spasm of related muscular movements — is interfering with the improvement of a stutterer. The physician can tell when chorea is the main cause of a sudden phonetic slump. He can explain the incurableness of the congenital syphilitic, as well as the permanent and unremovable defect presented in a juvenile case of tabes. Then he can discover the cases of speech defect due to idiocy and imbecility, and can save the teacher unsophisticated in medical subjects much time and effort by telling her that in those cases she need not expect any great amount of improvement. It is in this diagnostic service, this deeper, internal, medical interpretation of the background

of speech disorder, that the school physician can give the teacher invaluable assistance. The teacher should respect his diagnosis and follow his medical advice. She should respect the diagnosis because it is the outcome of the accumulated knowledge of the medical profession and is really the physician's legitimate and exclusive function. Much of her success in managing her speech-improvement class depends upon her ability and tact in using the services of the school physician.

While the physician can offer knowledge, diagnosis, and advice in medical matters, the teacher should realize the ignorance of the ordinary physician in regard to such special work as her own. He may advise that speech defects be let alone, so that they may be "outgrown." He may assert that they really amount to nothing. He does not realize the relations of speech disorder to the school curriculum. He does not know that the speech defective is also a singing defective, a writing defective, a spelling defective, and sometimes even a mathematical defective. Far less does he appreciate the fact that the elimination of speech disorder by the methods indicated in this book means also, to a very large extent, the simultaneous elimination of all those other kinds of defects just mentioned.

The physician may be able to explain the non-progress of medical cases, the background of which he has diagnosed and in which he has found some condition that makes progress impossible. This may excuse the teacher for apparent failures in regard to which a superintendent, not understanding the whole field, might perhaps blame the teacher, sometimes with a serious outcome. The physician can also relieve the teacher from much worry and anxiety caused by the non-progress of some of these hopeless cases. The physician can, in an authoritative way, advise the family to carry out hygienic measures where a teacher cannot, or he can occasionally remove a case from the speech class and put it in a special institution, a hospital, or a home for recovery.

7. What the superintendent should do

The superintendent's office should contain some one sufficiently interested in the speech problem in public schools to engineer the entire work. He should be the general supervisor and manager of all work done in the schools of his city in speech improvement. He should be constantly bringing new ideas from the outside world and inspiring the teachers under him to adopt them, as well as to obtain for themselves, in the

proper places, advanced instruction, practice, and knowledge.

I think one superintendent or assistant alone should be relegated to this work. He should receive regular monthly reports of the progress made in every individual case listed in the speech-improvement classes. He should insist upon regular, complete, and scientific records of every case from the time of its entrance into the speech class. The entries should be made week by week and month by month, if not oftener, and should be sent to the superintendent as monthly reports. If of scientific value, they may well be used by the superintendent or by the teacher in the formation of papers to be read to societies or published, thus giving wider scope to the good work of the individual teacher. This will lead to increase of salary, new appointments, and wider opportunities for growth and progress.

The speech superintendent should acquaint himself with the special training of his speech teachers. He should understand the educational background of the instructors that his teachers have had. He should know the different institutions — medical schools, clinics, and special schools — where speech instruction is given. This knowledge will enable him to advise his present and

future teachers intelligently in their search for further training. It will enable him to give them a timely warning against the fakes, charlatans, and untrained impostors that invade this field all over the country. All of these should be carefully tabulated and hung up in the Rogues' Gallery of his mind so that he can prevent any of his teachers from thinking that they have scientific and expert training in the field of speech when they have merely wasted their money on pretenders.

The teacher should look to the superintendent for all the services that have been mentioned above. She should take to him cases that do not progress. She should go to him about the removal of feeble-minded children from her classes. She should go to him for the solution of inexplicable backgrounds in cases needing the services of the physician, or those in which the service of the school doctor has been inefficient, inconclusive, or vague. Through the superintendent the teacher should get advice about the speech expert to be consulted for the solution of her more puzzling problems.

In a word, then, the superintendent is the final guiding authority and the final resort for the teacher.

8. Advice from the medical expert in speech

The teacher will find that whereas the usual case of speech disorder improves gradually under treatment until finally cured, there are some cases that progress at first fairly well and then stop; there are other cases that progress only a little and halt; there are a few that show from the start no advance whatever. We may suppose that she has taken these stubborn cases to the school physician, or at least has consulted his record in search of some solution. She has put the case before the superintendent, and satisfactory results are not forthcoming. She has asked the other teacher or several other teachers, and they are all puzzled. The final thing to do is to call in the services of a speech expert — the highly trained medical man who brings to every case not only a general education, a medical education, and experience in internal medicine, but also special study in the nervous diseases, neurology and psychiatry, and special study of the throat. He should have also a wide knowledge of psychology — and not alone that to be found in the universities, but also such a knowledge of individual psychology as is to be found in the schools of dramatic art. Above all this he should have had training under the speech experts

of Europe and America. By bringing to bear a large array of medical knowledge drawn from numerous fields of training, and focusing all his understanding and learning upon one puzzling case, such a man can often solve problems at once which have baffled all the other minds that have attacked it.

The advice of the medical speech expert is based upon several exhaustive methods of investigation. The teacher, therefore, should realize that in bringing the case to him she is bringing it in line with medical research, is putting it in touch with investigation, is putting it where exhaustive and scientific research of the whole problem may be carried through.

Advice that emanates from such investigation can be of great value to the teacher in solving her problems, in changing her treatment, in eliminating incurable cases from her class, in excusing her seeming lack of success before the superintendent. Sometimes if cases are brought early enough to the expert, the teacher may be saved weeks or months of tedious treatment as well as undeserved blame from her superintendent, the scorn of her co-workers, and nights of worry and anguish for fear she may be blamed.

9. When to return cases to the regular grades

It should, of course, be the ideal of teachers conducting special classes in the public schools to return as many of their pupils as possible to the regular grades. This ideal, seldom extensively realized in classes for mental defectives, is entirely reasonable in the case of classes for the eradication of speech defects where such classes are conducted in a scientific way by properly equipped teachers.

It is important to know, therefore, when to make this return. Should the case be sent back when improvement has begun? Should the return be made when the defect has been eliminated, or should the case remain after cure, and, if so, how long? In a brief treatise it is almost impossible to give exact and minute advice on every sort of case that may be met in the schools. I think it will be well to devote a paragraph to each of the different headings under which the speech-defect problem has been discussed.

The members of the *phonetic class* may be returned after their new pronunciations have become easy, automatic, and unconscious in everyday conversation and after this condition has lasted for a month. I should not even then have

them cease to practice. They should return occasionally to the class for tests and further advice —at first every two weeks, and then, after two or three months, every month for a year. In some cases this will be unnecessary. It is a matter of precaution. I warn teachers that it will save them much criticism, will improve their results, and will bring those unusual excellences that only persistent drill can produce.

Members of the *stuttering class* should be treated in a similar way, but they should be released more gradually and should be watched afterwards for two years instead of one year. Besides this, they should be advised to return at once on any marked relapse. Not only should they be made to report themselves, but they should bring reports from teachers and parents. Stuttering, unlike phonetic defect, is intermittent, so that to watch it thoroughly one must have reports from different sources — from teacher, home, and even playmates.

The members of the *class for mental defectives* are usually non-returnables anyway. Rarely will one be sent back to the regular grades, and they should all be put under permanent and persistent vocal drill for a period of two years, and then watched for two years longer. In general, indi-

vidual cases are to be returned on their individual merits.

10. Value of records on all cases

I have frequently mentioned the importance, nay, the absolute necessity, of an accurate and regular record. It is time to deal with this matter in more detail, to state clearly what a record is, how it should be started, what it should contain, and what services it should render to the teacher, to the doctor, to the superintendent, and, last but not least, to the case in hand.

Speech-defect records should begin with the statement of a *complaint*. This may be a term expressing what the mother complains of, or a summary in a word or two of what has been discovered by the examining teacher. It should be followed by a statement regarding the *present illness*, beginning at the onset. A little history should be given of the way the child learned to talk — age of walking, talking, and teething — and then a notation of the special speech influences exerted upon the child, such as foreign accent, the companionship of stutterers, the imitation of home phonetic defects. There should be a record of the amount of progress or retrogression that the child has made recently, and a de-

tailed statement of the methods of treatment it has been subjected to. The next item is *past history*. Here accidents, operations, unusual fright occurring previous to the onset, and any special peculiarities or background of the speech that may help to explain the speech disorder, should be tabulated in detail. The *family history* comes next. Here should be mentioned such factors as feeble-mindedness, insanity, mental retardation, queerness, other speech disorders in the family and relatives of the case in hand.

The results of the *vocal examination* should follow, with a statement regarding the general nature of the speech, pronunciation of vowels and consonants, the amount of stuttering, and other similar matters. The last item in the teacher's record should be a brief summary and the diagnosis.

There are other items that should be on the record, but which it is not the function of the teacher to obtain or to pass judgment upon. One of these things is the summary of the school physician's medical findings. Transferred to the speech defective record, this will sometimes easily solve a problem which is otherwise impossible. Any notes from the superintendent's office giving advice upon the case should be recorded. There

should surely be here a record of the teacher's visits to clinics and especially a summary of the diagnosis and advice of any speech specialists who have been consulted.

Outlines of this sort compose only the beginning of the record. After this certainly a weekly, and sometimes a daily note — concise, and employing vocal terms — should be added, with date, as the case progresses. These daily notes show progress in a way that the first record cannot. They show progress which, if not noted, is likely to be forgotten, so that when the case is finally summed up, the proper contrast with the original condition, and hence the proper credit to the teacher for elimination, is lost.

The school physician's use of the record is probably rare, but the original findings and the record of improvement may occasionally be of some value in leading him to a diagnosis.

An accurate, well-kept record enables the superintendent to decide whether to return a case to the grades, to remove it to an institution, or to keep it in the speech class.

The child also is served by a record in that his case can be taken up more readily by a new teacher when she has the previous findings to rely upon. His progress is put down as it really

is, and he receives credit and blame as he deserves.

Over and above all these things, the records may be used by the teacher in publication and in this way she may gain new appointments with wider opportunities for founding departments and inaugurating or organizing work in other schools.

School departments for speech improvement without records are unscientific and are worthless to future comers. On the other hand, scientifically kept and complete records of speech cases are of inestimable value to teacher, superintendent, and the patient himself. No department whatever should be started without complete consideration of the matter of records, and how to start them and maintain them in regular and perfect form. The time given this is well spent.

III

THE ELIMINATION OF MINOR SPEECH DISORDERS

To satisfy the demand for perfection in vocal utterance, not only must we treat of the frank defects in speech, but also some less marked faults, or inadequacies of utterance.

For this reason, let us devote a chapter to those too frequent and often extremely annoying minor speech faults known as "nasality," "monotony," "harshness," "hoarseness," "hasty," and "slovenly" speech.

1. Nasality

A definition. Nasality is the so-called "nasal" tone in the voice caused by obstruction of the nasal passages.

In normal utterances where *m*, *n*, and *ng* are used, the exit for air through the mouth is blocked. The stream of air must then find its only way of escape through the nose. Thus the nares are normally used in the utterance of these sounds. When, for any reason, the air cannot pass through the nose, there necessarily results

an imperfect enunciation of these sounds. They are not stopped, or even changed to other sounds, but are slightly varied. This change in vocal utterance is called "nasality."

Cause. This blocking of the nasal passage is brought about in several different ways. The simplest cause is illustrated by holding one's own nose during the utterance of those sounds which need the nasal air passages for their free expression. For those to whom nasality is not clear, this is a good way to learn how it is caused, to hear it, and thus to learn how to detect it in others. Hold the nose and pronounce *m*, *n*, and *ng*. Then pronounce the same sounds with the nose free. Better still, put these sounds into some sentence, such as, "I am going to Manila." Pronounce the sentence with and without obstruction.

Another cause of nasal obstruction may be found in the ordinary cold. This obstruction usually extends for some distance into the nasal orifice and so causes a more complete blockage than the mere holding of the nose with finger and thumb. When the air is obstructed merely at the exit, it can reach to the end of the nose and swell it out to some extent. But when the secretions of a cold in the nose prevent this, the re-

sulting nasality is more marked. The greater the obstruction, the greater the nasality.

Another form of nasal obstruction is an abnormal growth in the nasal passages. This may be due to accident, to a tumor, or to the overgrowth of normal tissue. The first two may be left undiscussed, as they belong exclusively to the province of the medical specialist. The last is so common and so often overlooked during treatment for nasality that a word about it here will be in place. The overgrowths referred to are called adenoids. Normally they are small, unobstructing glands in the posterior nares and offer no hindrance to health or breathing. But in certain individuals, mostly young children, the adenoids have an abnormal growth and completely obstruct the passage of air through the nose. There results not only nasality, but constant mouth breathing and other constitutional, vocal, and mental anomalies. Adenoids form a permanent, complete, and serious nasal obstruction that shows definite physical signs to the physician and a marked vocal sign — nasality — to the voice expert.

Treatment. In all these cases and others unnecessary to mention here there is only one cause and only one treatment. Our experimental way

of causing nasality with the thumb and finger illustrates both. The cause is always obstruction. The treatment is removal of obstruction. The nasality caused by the ordinary cold passes away when the cold is overcome. Adenoids must be removed by operation. This frees the passage, and, if no bad habits have intervened, articulation assumes its proper form immediately.

It is clear from this brief consideration that nasality due to mechanical obstruction is mostly a matter for the physician's attention. It may well be asked, therefore, "Where is the teacher or vocal expert needed in cases of nasality?" There is more room, perhaps, for the teacher than for the doctor, as the latter often can do no more than prepare the ground roughly for the finishing work of the former.

During the years of talking with vocal obstruction, bad habits of enunciation are usually formed which continue after the obstruction has been removed and cannot be corrected by the patient himself without help. These bad habits consist in poor breathing, faulty articulation, and lack of vocal flexibility. This matter of training after adenoid operations offers an important opportunity to the vocal trainer which will be reserved for later discussion.

The two points for the teacher and voice trainer to remember under the subject of nasality are, (1) a precaution, not to treat in a vocal way the nasality that is caused by obstruction, but to have that obstruction first removed, and (2) to devote all effort toward obliteration of the bad habits of speech that persist after such nasal obstructions have been eliminated.

2. Monotony

Monotony of voice is persistent sameness of pitch and intensity. Though there are some others, these are the principal causes of monotony that are amenable to treatment and therefore the only ones we need to consider here.

The causes of monotony are numerous, but the following are the most frequently encountered:

Absence of thought and emotion. Students of vocal psychology attribute changes in the voice to a change in the mental background. Conversely, sameness of voice should be attributed to an unchanged condition of mind. Absence of thought and emotion, whatever may be the cause of it, is a prime cause of vocal monotony. This is clear enough in the idiot and imbecile, in whom we know thought has a very limited range. It is

less easy to realize that many of those about us have but a slight range of thought and little or no emotion. Perhaps it would be better to say that they have little *change* of thought, little variety in their emotions. Special study of those who have monotonous voices will usually reveal the fact, after we become acquainted with their inner life, that their poverty of thought and emotion is the cause of their vocal monotony.

Lack of responsiveness. The mind cannot express itself adequately through the voice unless the vocal mechanism — lungs, vocal cords, and resonant chambers — is fitted to respond, and to respond with an almost infinite delicacy and perfection. But in many voices we find merely a rough, limited, hampered response to the demands of the mind. The deficiency is most marked when the voice is called upon to render minutely changing thought or sweeping changes in emotion. In the case cited above we have no variety of mental life to make the voice flexible. Here we may have a complicated variety in thought and emotion coupled with monotony of voice, merely because of a lack of responsiveness in the external vocal mechanism.

Conservatism. The mind dominated by intense conservatism shows a peculiar monotony of voice

which is hard to define. An acquaintance of mine who graduated from Harvard and taught in Vermont once said, when blamed for the even tenor of his voice, "Well, you see, I come from the old New England families who can't lose their heads over anything modern." His words indicated an adequate cause of his vocal uniformity.

Exclusive intellectuality. An unvaried intellectual life that leaves no room for emotion, enthusiasm, or expressive activity, except in so far as these are controlled by the intellectual interests, leads to monotony of voice. A Harvard professor once complained to a voice specialist that his voice always tired his audiences. The reason lay in the monotony of voice resulting from his constant preoccupation with intellectual matters, and particularly those of his own specialty.

Weariness. The monotony of voice due to fatigue is far from being the same as the monotony resulting from a deficient vocal mechanism. The former is temporary. The latter is a permanent pathological condition, or lack of development.

Exhausted muscles, vocal cords, and other parts of the vocal mechanism lose the energy requisite for a sensitive and delicate response.

The teacher who instructs from four to six hours a day knows that the closing hours — if monotony of voice appears — are her worst. The pupils are not interested, the work goes more slowly and the class learns less. Fatigue is a common cause of vocal monotony.

Disease. Many forms of illness result in a uniform vocal pitch and intensity that is to be eradicated only by attacking the disease itself, if curable.

The convalescence of aphasia in its motor form, the severer forms of chorea, the bulbar form of infection with the *spirocheta pallida*, permanent damage to the muscles of phonation, as found in progressive muscular atrophy, and many other nerve and brain conditions, affect the vocal mechanism each in its own peculiar way and are to be reached and treated only by the nerve specialist. Often the physician needs to be called to determine that no disease lies lurking in the background and that the vocal trainer may feel free to proceed. And this suggests the mistake made by many voice trainers — especially those who try to treat defects in speech — when treatment for defects is initiated without a thorough physical examination by a competent specialist. Teacher and physician should work together, each in his

proper sphere. Neither should attempt to usurp the duties of the other, although both work toward the same end of final cure.

Treatment. Monotony is easily treated. Singing lessons are good. Exercises leading to vocal flexibility are often sufficient to correct monotony in the speaking voice alone. But in cases in which vocal monotony has resulted from a deep-rooted conservatism or from a too exclusively intellectual life, a more extensive and deep-going method of cure must be adopted. Profound psychological changes must be effected if permanent vocal variety is to result. Of course, it must always be carefully considered whether such radical and protracted treatment is worth while. Most cases of vocal monotony are cured by easier means. Weariness of the vocal apparatus is cured by rest, and disease should be referred to the physician.

It is clear, then, that the larger proportion of cases falls to the teacher. They are to be treated by the ordinary vocal exercises which lead to control of the breath and to the flexibility of the voice. Through the judicious use of these exercises the commoner forms of vocal monotony are to be cured.

3. Harshness and hoarseness

A definition. A harsh voice is one made rasping, rough, or husky by the dominance of some intense mental state that temporarily or permanently dispels smoothness, evenness, fine quality. In other words, harshness finds its final cause in the persistence of a mental complex. This indicates a distinction between harshness and hoarseness. The former is due to a mental condition which finds its expression through a normal vocal mechanism; the latter, hoarseness, has no necessary connection with any mental state, it occurs in connection with all sorts of normal mental states, it is also possible in any abnormal mental state. The merely rasping and husky voice is caused by some physical change, like swelling, inflammation, or constriction of the external vocal mechanism. Harshness is caused by a mental state, hoarseness by a physical state. Vocal harshness may be due to a fit of temper. One may become hoarse by yelling for an hour at a football game and so causing some irritation of the vocal passages. But no one would say that a fit of temper makes one hoarse, or that an hour's yelling makes one's voice harsh. The distinction, then, is clear. We may assert that harshness

is due to a mental condition reported by the voice.

Harshness and hoarseness are not, however, mutually exclusive. Hoarseness often clouds harshness, though the reverse condition is never found. This concealment of the harsh voice by hoarseness is not permanent, but vanishes as soon as the physical cause of the hoarseness passes away. Harshness often persists permanently, since the mental states lying back of it are often more or less permanent. Permanence and mental cause are then the distinguishing criteria of harshness.

Causes. As we have seen, the causes of vocal harshness must be enduring mental states, conditions of mind that persist for a long time, attitudes that have become ingrained characteristics or permanent moods.

Selfishness. I intend no reference to the little passing selfish acts of everyday life, although these are more or less reported by the voice. The selfishness here referred to is deep and permanent — that which results from the feeling that one has been maltreated by a cold, heartless world and a consequent resolution to live and act only for self. Or the deep-seated selfishness which I have in mind may result from intense conflict

with the great selfish interests of the outer world. For example, poverty or sudden loss may cause and enforce a selfishness so profound that it comes to control our every act and finally casts its shadow even upon the voice.

This dominant selfishness may take many forms, even shapes that under the circumstances seem justifiable: self-preservation, dire need, uncalled-for self-seeking, the desire for revenge, selfish ambition. Harshness dominates in the voice of Lady Macbeth. By changing one word in a quotation from Pope I can illustrate the important distinction already made:

> "'T is not enough, no hoarseness gives offense;
> The sound must seem an echo to the sense."

That is, a merely hoarse voice never offends. It is the ugly voice emanating from ugliness of thought that pains us. It is not the bad voice, but the bad thought behind the bad voice, that gives offense.

Treatment. Hoarseness needs the doctor. Harshness needs the teacher, the psychologist, the psycho-analyst. Hoarseness due to inflammation and consequent swelling disappears when medical measures relieve the inflammation. Tonsillitis requires local treatment. The quinsy sore

throat must at once employ the services of the surgeon. Fatigue, when relieved, takes a consequent hoarseness with it. Throat spasm demands vocal relaxing exercises to relieve laryngeal contractions. The nervous strain often indicated by hoarseness has many forms and as many modes of relief. But these are matters that should be left to expert medical care and which therefore demand no minute consideration in this place.

The treatment of vocal harshness is quite another matter. The very foundations of thought and action must be tapped, exposed to view, studied, and then remodeled. As I have already intimated, there is always a question whether such heroic treatment is worth while in the individual case. On account of peculiarities in environment, some lives and minds are made hard and repellent by the very necessity of self-protection. With the cases amenable to treatment a long program of educational remodeling is the only road to permanent recovery. That remodeling consists in instilling higher motives of conduct, lasting altruistic interests, and final complete forgetfulness of the old, selfish, narrow life. When one has learned the joy of living for others, harshness of voice disappears. Thus, the teacher is called upon to teach and to exemplify a very great

lesson in order to instill a much less important one. She must eradicate a great fault — perhaps the greatest — before she can uproot this comparatively slight one — vocal harshness. A young lady, about ready as far as age was concerned to "come out" into society, found herself, or, more exactly, was found to be meagerly educated, unattractive, unpleasing in conversation. Moreover, what none could explain, she was harsh in voice. She sprang from an old New England family in which the inheritance of an honorable name was considered all-sufficient, whether any character, accomplishments, or worth accompanied this or not. Before her "coming out," however, she wanted to improve. She sought advice, which, when followed, made her, as she said, "entirely over." She was given some all-absorbing, active, hard work among poor people, which she followed for a few years. Her power to help grew, she saw real life among the needy. Previously a novel, an evening "dressed" at home, and hours with the embroidery needle at the fireside had quite satisfied her inherited tendency toward industry, but a larger life, real work for others' good, and the demands of altruism showed her that her previous life had been narrow, selfish, and really low.

As a result of this profound spiritual change, the old voice vanished, when and how she knew not. She did know that she was almost another person, and others knew that her old voice, hard and harsh, had been somehow replaced by another voice that was smooth, round, rich and mellow.

4. Hasty speech

To define: A hasty speech is one that shows undue speed in utterance. By undue speed of utterance I mean a quicker succession of words than is called for by the circumstances in which they are spoken. We speak of rash acts, deeds that are precipitate, acting without deliberation. We are now to discuss, with regard to speech, a similar precipitancy, a similar hastening onward with speed unwarranted by the circumstances.

Causes. The causes of hasty speech are many and subtle. *Imitation* is one of the often unthought-of causes. We frequently notice certain other modes of speech running in families. Peculiarities of pronunciation, speech accompanied by facial twists, even forms of smiles, run in a family. Forms of gestures, ways and habits of eating or of removing the hat, of saying goodnight, and what not, descend from father to son. Comparatively seldom do we find the rate of

speaking inherited, of course through the medium of habitual imitation.

Imagination, vivid and prolific, frequently results in hasty speech. Those whose mental creations are turned off at a terrific rate feel that words are too slow, feel that language retards them. It certainly does lag behind in the pace set by their imaginations. The market is overstocked, their storehouse of thought is overcrowded and seeks relief. Speed of speech is the only outlet, and so a terrific speech is maintained to keep pace with the sweeping speed of their imaginative manufacture.

The *habit of stuttering* is another frequent cause of speed in utterance. The stutterer sees ahead of him certain words over which he knows he is going to stumble — certain sounds he will have to repeat perhaps ten times with severe muscle contractions of his throat, even of his face, and sometimes with gross bodily contortions. He has discovered a trick to prevent such anticipated stutter — the trick of whipping up his horses and going at a breakneck speed past his difficulty. Having succeeded once by means of this stratagem, he learns to rely on speed, until finally hasty speech becomes his usual mode of vocal production. At length, whether occasion

calls for it or not, he habitually rushes his words off with terrific dispatch.

Interruptions. Among refined people it is considered impolite for one to interrupt another in conversation. In many families, however, the members break in upon one another's speech with constant interruptions. Rapid utterance is resorted to when one sees an interruption coming in order to finish what one has to say before being cut off — sometimes even to succeed in getting a word in edgewise.

Other causes there are, but since the treatment varies little from case to case, whatever the cause may be, let us proceed to consider:

Treatment. In the treatment of this as of all other forms of vocal defect, one must first elicit a desire and ambition for normal utterance. Without this desire and ambition for normal speech it is impossible to get any one to go through the steps necessary to its attainment.

If the difficulty is due to an abnormally swift and prolific imagination — if the unhappy possessor of the hasty voice thinks like the three witches in *Macbeth* from one end of the universe to the other, in an instant including everything between, then I must confess that I know hardly any cure. Who can curb the flight of a witch's

imagination; who can cut short such copious and prolific manufacture of visual pictures; who can control a mind thus wildly let loose? There are, however, certain precautions which one may attempt, such as moderation, reserve, inhibition of expression. One may use the sedative of self-control, and this, after years of practice, may result in some change. Here the task is difficult and hardly worth while in the face of the truth that hasty speech is not such a terrible misdemeanor after all. We should count the cost and see if the long effort necessary to cure is likely to be justified by the result.

If fear of stuttering is the promoter of rapid utterance there is at first but one step to take—refer the sufferer to some reliable practitioner and voice specialist or to a lay teacher thoroughly trained under the personal direction of such an expert.

Stuttering is a pretty serious condition, as it excludes the possessor from all kinds of normal social intercourse. It often makes friendships impossible; it postpones or entirely prevents marriage; many times it prevents a man from obtaining permanent employment. Such a serious condition should be under the care of the vocal expert so as to avoid the relapses that so frequently

occur when the casual, untrained teacher is employed. Training for moderate speed of speech will not cure stuttering; it may temporarily, or rather, momentarily, sidetrack the malady. A permanent cure, however, requires a reformation of the inner personality by a long process of psychological analysis and synthesis. This subject — the treatment of stuttering — is too large for adequate consideration here. The only phase of it that logically comes up for consideration has to do with the speed of the stutterer's utterance. This sometimes lasts after the recovery and sometimes is the main part of the stutterer's habit. A good way to overcome this is to have the stutterer talk with a metronome ticking at the precise rate at which you wish him to utter his words. This, however, is a mechanistic and external treatment. The better and the psychological method is to get slowness through mental concepts, and their installation, as a permanent mental possession — the control of motor output by instillation of sensory content.

Summary: Hasty voice comes out of impelling mental complexes — the demand of imitation, the effort to keep up with the flight of imagination, the resort to speed to sidetrack a stutter — concepts that sidetrack inhibition, and allow ut-

terance in uncalled-for speed. Briefly, the treatment consists in annulling the causes, reinstating a normal inhibition, and implanting new constellations of ideas that work as complexes for slowness.

5. Slovenly speech

As slovenly dress differs from dirty, faded, and ragged dress, so slovenly speech differs from nasality, monotony, harshness, hoarseness, and hasty speech. It is, in reality, unduly relaxed, lazy speech. It results from a lack of careful mental guidance, from carelessness in following articulation models.

Mental states of dejection, weariness, submission to a power recognized as higher than that of the individual's will, report themselves in the voice and show in what is here named slovenly speech. Countries in which women are very submissive, as they are in Russia and certain parts of Germany, are likely to be countries in which the women are slovenly in attire, physical attitude, and voice. The three things are usually found together, since they are all equally the exteriorization of one mental state.

What sort of mental state is this? It may be described as a state of listlessness. Where the

dress lacks neatness and refinement, the voice is likely to lack precision and subtle gradation of tone and quality. In slovenly speech all the life, enthusiasm and animation of normal utterance are gone. It is like a befogged picture, a misted landscape.

I remember the case of a young man upon whom three disasters fell in one day. He failed in his entrance examinations at Harvard; his father lost all his money; his mother, in consequence, went insane. The weight of this threefold misfortune made him for a time utterly dejected, purposeless, without interest in life, and the whole experience resulted temporarily in a slovenly voice.

Children who are forced to work too early in life and who have not been given adequate instruction in manners and morals are likely to be slovenly in speech. So also are the wives of tyrannical husbands and men who spend their lives in subordinate positions, always doing menial labor. Degradation, poverty, and neglect make people slovenly, but not always. Many escape. For this reason, it seems clear that there is nothing inevitable in such a result. A will sufficiently alert and strong can avoid this consequence, even under the most depressing external conditions.

Imitation of older members of the family frequently causes slovenly habits and slovenly speech in children, but this powerful influence also may be overcome.

The treatment for slovenly speech is largely psychological and moral. Self-respect and a desire for the respect of others must be instilled. In the case of those who are timid, withdrawing, unduly submissive, it is well to instill ideas of the moral, civil, and social equality of all men. It will be found that as the patient comes to take a more exalted view of his own powers and position in the world, his slovenly manners and speech will fall gradually and naturally away from him.

IV

HOW THE TEACHER MAY ACQUIRE A PROPER STANDARD OF SPEECH

PROPER standards of speech are to be attained only by taking a larger view of speech than most teachers seem to have. When the teacher has studied the subject, when she has, for example, taken summer courses and has had a year's experience in practical work, then, to be sure, she should be capable of this larger view to which I refer, but no one can attain it by listening to a few words of instruction, by reading a book, or even by seeing in class, on the stage, or in the clinic, the outward expression of its attainment. One really has to pass through the training himself. Here, as in religion, one has to "live the life to know the law."

To indicate, as far as can be done by the printed word, this larger conception, and fuller appreciation of speech is the purpose of the following paragraphs.

The study of the voice and of speech has many phases. Some are more necessary than others.

A few may seem to the uninitiated quite unnecessary. When speech is understood in a broad sense, however, and its scope and complexity are appreciated, when one sees the full difficulty and importance of the speech problem in schools, then it becomes clear that the teacher should add to her equipment year by year until finally she becomes invulnerable in knowledge and versatility.

I propose to suggest places and ways in which to obtain this knowledge. Also I wish to show the utter inadequacy of the poorly trained and the danger, even to the teacher herself, of inadequate equipment.

1. Time spent in regular grade work

Teachers know that even when they graduate from the normal school they are sufficiently inexperienced. They realize this still more keenly after they have taught two or three years. The schools where they are first employed realize the same thing.

The speech teacher also needs experience in the grades. Without such experience, she does not realize how to start with a class nor how to manage a group of children. A teacher who has had several years of experience has no difficulties of

this sort. The experienced teacher knows how children learn; she knows how quickly they forget; she knows how frequently they need review; she knows, too, how easily they get into wrong habits; how they are prone to evade their superiors, and finally, how easily they may be directed by the tactful guide.

Regular grade work is an important asset to the speech teacher. I should recommend at least a year of it. Those who have had two or three years are naturally better fitted. Occasionally I have found a teacher who has had ten years of grade work before starting in speech, but this, of course, is exceptional and really unnecessary. Instructors in the schools from which speech teachers are turned out ought to require a year or two of training in the grades as a requisite for admission. From this word on general grade work and its value to the speech teacher, let us pass to some other forms of education and personal development, accomplishments that help in the management of the class for defective speech.

2. *Value of elocution, music, psychology*

Elocution, oratory, oral English, public speaking, or whatever one may call it, is a sphere of training that adds greatly to the training of the

speech teacher. I do not refer here to that mere reading knowledge to be derived from the books on public speaking, nor do I refer to the superficial experience to be gained in a few lessons with a private elocution teacher. I do not refer to the mere committing selections to memory and the giving of them in solitude or even in public. Those who have done no more than this are comparatively ignorant of the field and, if they claim much, they are mere pretenders. In order to pursue the study of oratory worthily and properly one should go through one of the recognized schools. Only so can one hope to develop step by step through the long stages of oratorical evolution toward anything resembling the mental powers and characteristics of the expert actors.

The proper study of oratory brings personal development as well as knowledge of how the minds of others may be unfolded. It shows the scope of imagination and raises one's ideals of vocal and phonetic execution.

Musical ability is another aid to the teacher in the classroom for speech disorder and cannot but add enjoyment and success to her management. The utility of the piano in such a classroom is obvious. Singing can be occasionally introduced to break up the monotony of vocal exercises, and the

possession of musical knowledge helps one in the understanding of phonetics and mental functions.

A knowledge of *psychology* is invaluable. Elocution is based upon psychology, but upon an individual, living, functional, active, psychology. I speak now of academic psychology. This refers much more to what is true of the mind in general than to what is true of individual mentality. Psychology should be studied in summer courses and by reading, by introspection, and by researches in the classroom.

3. Phonetics not to be learned from books

The idea that the whole science of phonetics, including, of course, methods of correcting defects, can be learned exclusively from books, is so common a misconception that I have thought it worth while to attack it directly and vigorously. Granted that something can be learned in this way — perhaps a third — in such subjects as this, however, the ear is the special avenue of knowledge. Printed words can give at best a very meager description of anything phonetic, whether it be the simple description of normal utterances, methods of phonetic treatment, or processes of evolution from the beginning of utterances to the final perfection thereof.

Describe the voice, for example, of some great man and say that his speech was emotional, had volume, flexibility, and clearness. To the initiated these terms mean more perhaps than to others, but how far is that description from the real voice itself!

Let me add an illustration of this important fact that some sorts of knowledge are communicable almost solely through the ear. The singing teachers of to-day feel a real superiority to their fellows of the younger generation in being able to say, "I have heard Patti." They really feel that they can communicate a peculiar excellence because they have a peculiar ideal, that they have a sort of refinement gained through the hearing of this great singer, which those who have never heard her cannot possibly ever possess.

Ideals of phonetic excellence can be obtained only by actual study under the masters of phonetic execution; by actually hearing the utterances that illustrate absence of different functions in the nervous system, by actually seeing experts vary and change voices under treatment, by actually hearing that change itself and learning to interpret it, by actually listening, under direction, to a great variety of speech defects as well as to normal and highly developed speech.

Books, then, carry but a little way in this study. One must learn to hear, he must expand and refine his interpretations of what is heard, he must learn under expert guidance to think upon aural sensations, so that all this may formulate an ideal output.

4. Special training for the correction of stutterers

All sorts of persons consider themselves fitted by attainments or by nature to treat stuttering. Persons who have been cured of stuttering by some one else, others who have cured themselves, and — I mention it with a blush and a shudder — sometimes even uncured stutterers who, because they have the disease, claim a knowledge of it, offer their services in the effort to cure others. This sounds plausible and right only to the ignorant and unsophisticated.

The training necessary to one who undertakes to treat stuttering is more extensive than one is likely to imagine. One must show tact in the management of patients. Every patient must be given a physical examination in order to eliminate any physical ailment which may be a cause of the speech disorder or may be sapping vitality and so preventing recovery. The teacher should know something about the history of treatment for

stuttering. She should know the modern psychological investigations in both the conscious and the subconscious fields. She should know the value of visualization processes in relation to stuttering. Above all, she should realize the importance and value of what is vaguely called suggestive therapeutics.

Teachers trained for speech improvement should not be discouraged by these high standards. These standards do not prevent one's beginning teaching in a small way. One can begin work in speech instruction with only a little preparation. The bigness of the field coupled with the small requirements for entrance to it should lure numerous teachers to the undertaking. Let us not be satisfied, however, with this modest beginning, but let us add constantly to our equipment.

5. Special training for the "special class"

In the "special class" are included all grades of mental defectives from the idiot and the imbecile to the moron and the specialized defect. The application of speech improvement to this class is our present problem.

Normal phonetics is usually tried upon these cases. That this is folly has been shown else-

where. The systems and methods mentioned in our closing pages show this conclusively. The speech teacher who is called upon to conduct such a special class should seek instruction in places where a special phonetic system is applied to these pathological cases; she should learn the methods of examination and treatment peculiarly adapted to them and should get to know their psychological background.

6. Where to go for training

Two or three medical schools, one or two universities, several private individuals, and a number of speech experts abroad, offer expert instruction in speech disorders. I will try to mention these in the order in which they were founded. They are: The Medical School of Philadelphia, the Rush Medical School in Chicago, the Harvard Graduate School of Medicine in Boston, the Columbia Medical School in New York City, the State University, Columbus, Ohio. I hardly think the names of private individuals are needed.

One should not allow considerations of distance or expense to interfere with one's choice of the school that affords the best possible training. The fact that schools, like individuals, have specialties, makes it advisable to attend several insti-

tutions in order to complete one's equipment. One should never feel that any single master, even the greatest, can teach all that there is to know about so complex a subject. One should have as many masters as possible.

The first question, however, is where to begin. This somewhat depends upon one's previous study, whether he has already had training in psychology, elocution, and regular grade work, or whether he is entirely a novice.

Choice of a master is best made by frankly writing to all those who offer courses in speech disorder and asking them for details of their courses, with a list of steps in their training and addresses of students. Then I should carefully compare the answers received to discover which are merely throat men, which have studied only oratory in addition to medicine, which have studied abroad, and which, finally, have thorough training in *all* the fields of knowledge that can be in any way helpful to their work. In all this, of course, one should remember the value of the specialist. I know, for example, of only one man who offers a course in the neuropathology of the speech mechanism. I should write to about five student references and find out if their courses were satisfactory, if they got what they went for,

if the teachers seemed to know their subject, and if the methods they inculcated were really effective in actually curing patients.

7. Is medical knowledge necessary?

There can be no doubt that the problem of speech disorder is a medical problem. The few who deny this might as well say that nursing is not medical. The fact that much of the treatment is educational makes no difference; the fact that a knowledge of psychology is necessary does not alter the case. A medical problem it is. The question arises, then, is medical knowledge necessary, and if so, what sort and extent of medical knowledge?

Some physicians have grasped the opportunity offered to them in the problems of speech and have found the work lucrative, interesting, and of great value. There are localities, however, where medical men fail or refuse to understand the situation. They are like a New York lawyer of whom I once heard. One on the opposite side of the case asked him, "Can't you see that?" His answer was, "Yes, sir; but I won't." Such men finally discover that their exclusiveness has succeeded only in excluding themselves.

Where medical men refuse to take up the

speech problem in a diagnostic way I advise my own teachers to become acquainted with the medical side and to usurp the activities of the physician in as full and scientific a way as possible.

Medical knowledge is a great asset to the teacher. It solves many otherwise insoluble problems; it explains some of her failures and excuses her to herself and to the superintendent. I always try first to open the field to the physician so that he may take his proper place in the school curriculum and in the speech circle, but when he refuses, I try to inspire the teacher to do what the medical man can't or won't do. In case this induces the medical man to come later, my answer is "too late." Medical men have refused to go into the field of specialized suggestive therapy, and as a consequence laymen to-day have their patients. The speech-disorder problem is similar. It has previously been mostly in the hands of charlatans and impostors, using veiled, suggestive therapeutics without knowing the reason for their cures. Now this field is being returned to the medical profession, but in those cases where he does not seize his opportunity, the teacher can do no better than to take his place.

In a word, speech defect is a medical problem and medical knowledge is often necessary. If a

physician's services are available, that is enough. If not, let the teacher take the physician's place, do his work, and take his pay.

8. Value of work in a special clinic

The teacher's own standards of speech should be as high as possible if she is to carry her pupils to the highest possible attainments. We cannot lift others in religion or ethics to any higher plane than that on which we live ourselves. It is the same in speech. The teacher's class will not rise to a standard of speech higher than her own.

There is no better way of securing a proper standard of speech than that to be found in long service in a special clinic for speech disorders. This clinical experience should follow the period of didactic instruction and should be followed in turn by a period in which the learner watches in that speech clinic; and following this, a period of watching an expert examine and treat cases. This observation of the work of others should be followed by an application of the same technique to the old and new patients in the same clinic under the criticism of the expert speech specialist.

Besides these there are other things that make the service in a speech clinic of inestimable value and interest. One of these is the carrying for-

ward of researches, the compilation of data, the reading of papers. I should choose a clinic conducted by a man interested not only in treatment but in research, a clinic in which there are public meetings and the reading of papers. All these things add zest, interest, and enthusiasm to the work, and improve the equipment of students.

Speech clinics that do no teaching, that carry on no researches, get out no papers, and have no "authors' evenings," are uninteresting and unprogressive. Each of these activities increases the value and excellence of every other one. Research improves treatment. Preparation of papers gives research and treatment added momentum, and the occasion of the author's evening or "reading" adds an enthusiasm to the work of the clinic which can be secured in no other way.

Clinical work gives the teacher a deeper insight into treatment, gives her the research spirit, incites her to publication. All this leads to new and better appointments. By long experience in the clinical work she sees the folly of applying one and the "only method" to every case; she learns that every case is different from every other and therefore requires a new and different method of approach. The teacher should investigate all these things before she studies anywhere.

9. Visiting other schools

Didactic lectures, speech-clinic service, reading, actual experience in teaching — these are among the best ways of perfecting that proper standard of speech which should be the final possession of every efficient teacher.

In the visiting of other schools, however, one is likely to find important additions to and corrections of his own methods, no matter how perfect he may think they have been. Experienced teachers who have studied under other masters can provide a somewhat different perspective and can illustrate points of view that we had not thought of.

The author has made three surveys of the work in correction of speech disorders done in the public schools. In all, I have visited some twenty-five cities of the United States, trying to ascertain what ways and means have been employed and what results have been secured. I have learned much from these surveys, and I most strongly recommend the school visit, therefore, to the teacher who has less acquaintance with the work than my own twenty years of experience have given me. The novice, however, can learn little in this way.

Programs for school visitations should be made regularly. Once or twice a year a teacher should have a week off and visit a neighboring city. Occasionally she should travel farther to attend large educational meetings, hear the papers of other teachers, and in this way get new knowledge and new methods.

10. The pitfalls for the poorly trained teacher

The ideals of speech work hinted at in the previous pages put the standard of attainment and the final goal of excellence on a pretty high plane. It will be well, therefore, to spend a few paragraphs in discussing the dangers which beset the specialist who falls short of this high ideal of equipment.

It will be well to begin with the lowest in the scale — with utter incompetency and ignorance. One does not need to question the sincerity of these inefficient practitioners. It is their inefficiency with which we are here concerned. A concrete case will illustrate my point. I know of an instance in which a child with defective speech was written to by a distant private individual who had not seen the case or tried to know anything about its medical background, but who *promised complete cure* in three months at the rate of one

hundred dollars a month. The mother of this child had five hundred dollars in the bank. It took her other two hundred dollars to transport her child, keep him in the distant city for three months, and bring him home. After his return he was taken to a charity clinic, where he paid nothing for expert opinion which, in the course of about two hours, established the fact that the case was one of congenital syphilis. On this basis the physician was able to say that nothing whatever could be done to improve the speech. I cannot call this performance anything but downright robbery, for no improvement resulted.

Numerous cases have come to me from teachers in the public schools. They can be classed as stuttering, phonetic, and mentally defective cases. I have known stutterers who have been treated for two years without any improvement. Investigation of the methods employed showed that the teachers who applied the treatment for stuttering knew absolutely nothing about the cause of cure in any successful treatment. They put all cases through the same regular routine. If a third or so improved, they seemed to think that there was no reason why the others should not. I have repeatedly asked such teachers how the stutterer was cured, and I find that where

failures are frequent, there is constantly this ignorance as to the proper cure for stuttering.

Phonetic cases are attacked by the untrained teacher by a parrot-like method. She has been studying some book, little knowing that from books one can learn little of phonetics, or she may have been attending some superficial course of lectures in which her attention has been absorbed in the mere mechanism of speech. She has learned little rules and directions by which phonetic defects are supposed to be corrected, and she applies them all, parrot-like, to every case. She may even have been cured of one defect, such as lisping, herself. On this basis she considers herself competent to teach not only other lispers but all mispronouncers.

This is the condition of those who think that speech is not a medical problem. Such persons often exhibit, in exact proportion to the amount of their ignorance, a happy optimism and a profuse array of promises of recovery that often stagger the speech expert. Of course they capture the patient and entice the ignorant layman. The guarantee of cure, which science fears to give, allures the unwary.

Mental defective speech cases are those in which the hopeful, altruistic teacher makes her most

signal failure. I have seen numerous cases of mental defect treated for months and sometimes for years with little or no progress. We are accustomed to excuse such performances on the ground that the teacher did not know any better, having been trained only in normal phonetics when she should have been trained also in methods applicable to pathological cases. Her action is not dissimilar to the practice of medicine without a license. If there were any danger in the use of her appliances, if there were any use of medicine in the technical sense, then she would be liable in law. The spirit of the law reaches farther than the law itself. She is defying the spirit of the law when she ignorantly takes up these medical cases without proper medical speech training. Her ignorance makes no difference in the eye of the law, and it should surely make no difference here. I consider her action a punishable offense.

Inadequate training, finally, is dangerous to the teacher in her own person. The sense of inadequacy coupled with the sense of great responsibility which every teacher engaged in speech work must feel, is more than the average nervous system can endure. Only the calm assurance of mastery which comes of thorough preparation can avail to carry one without undue

nervous strain through the arduous, exacting work of the speech teacher.

Another too frequent blunder in this field of speech correction which may be avoided by those who choose their instructors wisely is seen in bad school management. It is, for example, a great mistake to employ a "special teacher" to give her entire time to speech correction in the schools. The work is too monotonous for her good and her pupils are injured by being temporarily removed from the grades. She loses contact with the normal child minds with which the ordinary grade teacher deals. The board loses a grade teacher and pays high for a special teacher.

All these things are avoided by the solution which I propose. The "part-time teacher" continues her grade work and allows her speech pupils to remain in the grades. She meets them for a short time after school. This gives her variety of work in the place of monotony. The board loses no teacher and saves the expense of a high-salaried specialist by raising the part-time teacher's salary a little annually. Thus there are obvious advantages to pupils, to teachers, and to school boards alike.

V

SPEECH IMPROVEMENT IN KINDERGARTEN AND ELEMENTARY GRADES

PREVENTION in speech disorders has scarcely yet begun. The case is similar in other fields. It took modern medicine over one hundred years to recognize prevention as its most important function. But why is this? The reason is that we see the problem, so to speak, only in its advance guard, and we strike only at the foes that we see. It would be better to train our long-range guns over the first-line trenches and upon the roads and centers of supply which feed them. Diseases were first attacked by seeking some method of eliminating them directly. It was many years afterwards that men sought to uproot the origins of disease. In the speech disorder movement of the present day we have already passed through one or two phases. We have seen the problem. We have attacked the problem where it seems most obvious, in the years, namely, from eight to sixteen. Let us take a warning from the history of medicine and initiate a program of

prevention before we are forced into it by finding the old program useless. Let us *start at once* on prevention.

It is hard to do this. A school committee can be made to see that speech defect should be eliminated in the sixth, seventh, and eighth grades. There the problem looms large enough to seem worthy of an appropriation of funds. If we suggest, however, that the problem be attacked lower down, on the side of prevention, and advise that the work be initiated in the kindergarten and primary grades, nobody will be moved an inch! Enlightened teachers and superintendents should do what they can to change this condition of affairs.

Ideals of prevention, following the aims of medicine, lead us to start our program of speech reform in the kindergarten. Dare I hint the advisability of going still farther back? I fear it is n't quite time. I fear we shall have to attack the preventive problem in the kindergarten for a few years before it can be generally realized that still farther back lies the real spring from which our speech disorders take their origin. *Prevention in the home*, then, will be reserved for another time. School managements may balk even at this suggestion that they make their chief point of

attack in the kindergarten, but they would certainly balk if we tried to initiate any program of prevention in the homes! I see no reason, however, why, five or ten years from now, there should not be sent out from the superintendent's office a corps of visiting social workers to go into the homes of children who are to come into the school in a year and give them, where necessary, a year's instruction in speech. Then we should naturally find the problem removed from the kindergarten to a great extent, just as we expect to remove it from the higher grades, by concentrating our attack upon the kindergarten.

1. Importance of the child's speech environment

Speech disorders in the early grades tend to make us look backward to see whence they have come, not for the sake of initiating any method of treatment, not for the sake of prevention, but to get whatever information we need for the treatment of the cases.

Imitation plays an important part, as we have already noticed, in the child's speech defects. Foreign accent in the home is almost sure to influence the child's speech in school. Almost all phonetic defects, and very often lisping, have their origin in imitation of some one in the home.

That stuttering is often caused by imitation has been recognized for a long time. From this it is very easy to come to the final conclusion that the speech environment in the years that precede the early school years is stamped upon the individual in a most permanent and lasting manner.

The negative side of a proposition is not always so interesting as the positive side. Early environment does indeed cause speech defects, but it can just as easily set the mould of speech in the line of perfection in all the excellences of utterance. The ideal kind of speech environment can impress itself just as indelibly upon the child in his earliest years as can the faulty speech environment. It is not our present purpose to initiate any effort toward the establishment of a speech environment conducive to elegant English upon entrance to the kindergarten, although this could very easily be done. Social workers, for example, could gather the children together in groups and give them speech instruction. Speech environment may be improved in numerous other ways. Night schools for the parents would eliminate speech defects and mistakes in grammar, and thus improve the environment of those still in tender years. Older school children bring their speech standards back from school and raise,

thereby, the general speech standard of the whole family.

The sources of our kindergarten speech disorders are usually found to lie in the speech environment of the home. They may also be due to inherited mental deficiency. Sometimes they may be traced to some one in the child's neighborhood outside the home. With this knowledge of the sources of early speech defects, we can approach the problem of their elimination with better understanding.

2. Importance of the period before speech begins

The mother listens for anxious months for the first word spoken by her child. It is noted down with date and hour, and the whole family is called in to hear it repeated. Little think they of the amount of culture, education, and training that the little one must have passed through in order to perfect the first tiny utterance. There has been a long period of sensory registration of the sounds in the environment. All this time has been spent in listening, taking in sounds, recalling them, impressing them upon the memory by constant repetition, until finally, after a year and a half, the speech arc is completed and one single word drops out.

In this pre-talking period of sensory intake the standard vowel and consonant sounds should be heard and remembered, the proper use of the speech organs should be learned. In these early years, also, exact and correct combinations of vowels and consonants in words with their customary accent should be heard and learned by the listening child. We cannot too strongly emphasize the great desirability that the child should hear only perfect English in these years. If we would have a correct and ideal utterance when speech begins we can obtain it only by the influences and the environment of speech which we cast about the child in his listening years.

Montessori mothers allow their children perfect freedom in the repetition of any speech mistakes they may hear, just as they allow them bad table manners and unwarranted freedom on the street. The idea is that they should not be thwarted but should be allowed to grow out of their slovenly ways. This whole idea is absolutely out of harmony with acknowledged psychological principles of growth. It is just as easy to begin with correct as with incorrect models. The child should be shown at the start the correct and customary utterance, act, or liberty, with the best technique possible in its accomplishment. The growing child

should never hear phonetic defects, imperfect vowels and bad grammar or slang, consonants, stuttering, or any speech disorders whatsoever. If it does, utterance of the thing taken in is to be expected. If it hears only perfect English, perfect grammar, its utterances reach those ideals of English pronunciation which otherwise take so long to instill.

3. The earliest utterances — source, form, significance

The baby's first word has numerous interesting phases. There is a whole psychology and an interesting anatomy hidden away behind that simple utterance. The earliest word may be studied under three aspects: the source, the form of utterance, and the significance.

The source of the first word is usually found in some phrase, name, or single monosyllable frequently heard by the child. The name of the dog, of the father or mother, of another child, or some very frequently used phrase, like "Oh, my," "Oh, dear," sometimes even an oath, may be the first utterance of the infant. This oft-repeated word may be caught up from the other children. Rarely is it marked by a speech defect, and, if it is, it is one that is frequently repeated in

the family, has been drummed in for months and months, and by thousands of repetitions. First words are rarely if ever long ones, they are usually monosyllables, they are usually names. Almost always they are sound repetitions.

Knowledge of the sources of early utterances helps in tracing speech disorders, and in the treatment of them. If the first incorrect utterance is due to a thousand repetitions of it in the child's hearing, it might be curable by a thousand repetitions in his hearing of the correct pronunciation.

I have heard it stated that children never use abstract terms, and rarely use adjectives. But forms of first words take no definite shape. Some think that they should be names, others that they should be words of motion, but this is not at all so. The form then is entirely immaterial.

The choice of the first word is determined by what has been most commonly uttered in the presence of the child, be it noun, adjective, abstract word, or what not. It does not signify that we begin our thinking with nouns, or with words of motion.

Significance in the utterances of the year-old or two-year-old child is minimal. It cannot lead us to any very profound psychological generalizations. The child's first word signifies that the

speech arc is completed, that a certain definite sound has been registered, that some simple collaborative process has been carried on upon that registration, and that finally it has been exactly taken over and put out through the motor area with such exactness that it can be recognized and traced to an old environmental utterance long and often repeated.

Observations on first words give us an inkling into the origin of speech. They let us see how long and frequently the first word had to be heard before it was put forth. Let the teacher of speech disorders take courage when she finds that she cannot correct an imitated lisp in a week. It took a year and a half to instill that lisp and, perhaps, following that, there have been two or three years of repetition.

4. Simple speech — how to amplify it

Passing the early years of speech beginnings, we come to a consideration of somewhat more complicated utterances, those that we are likely to find in the kindergarten. Here the important thing is to amplify speech, to make it evolve, to encourage it, and to keep it to its proper standard.

Simple speech includes mostly names, a few adjectives, few difficult connecting words, simple

sentences. All these have their origins in words picked up at home. The whole infantile vocabulary is nothing but an echo of the home vocabulary.

Amplification of simple speech should take three directions: repetition, application, and addition of new words. If these three methods are undertaken and carried forward, the speech already attained is at once deepened and amplified.

Repetition of old utterances. When the child hears his own words repeated by another person, he gains confidence because he sees that his utterances are understood and that he has made his point. Intimacy and confidence, friendship and mutual understanding, are insured between the child and the teacher by the teacher's repetition of the child's own words. I have seen a mother try always to give her child some new phrases in answer to its words, the result being confusion, coldness, and misunderstanding on the part of the little one. Never hearing its own words repeated, it never felt that its own words had got across into the mind of another.

Application of old words to new situations is another means of encouraging and amplifying speech. The child should be told, in the words he already knows, to do certain things. Obedi-

ence signifies that the meaning of the words has been understood. Application of the child's vocabulary in this way deepens the impression of the words he is familiar with and makes them less easily forgotten.

Addition of new words is our third method of simple speech amplification. New terms should be taught by illustrating their use. The child should be shown a given object repeatedly, before any word is uttered. Then the name of the object should be given and repeated. Next the child should be told to use the object named in some definite manner. In this way the word is kept before the child's mind for some time. Finally, the child's registration of the new word should be tested by asking him to name the object. If the previous steps have been properly taken, the name will be immediately forthcoming.

In a word, then, the steps for acquisition of a new vocabulary should be sensory presentation of object, followed by repetition; secondly, name of the object, followed by repetition; thirdly, use of the object, also repeated; fourthly, request to produce the name of the object at sight. These simple steps may be seen to be the logical series through which learning processes pass. They have an anatomical basis, a physiological back-

ground, and a psychological foundation, that make just these steps and in this series proper and necessary.

Hints like these as to the beginnings of normal speech cannot but serve the teacher in dealing with speech disorders by thus giving her an insight into the nerve series, the physiology, and the psychology of early speech. When one sees that the normal learning of words takes so much time and so many repetitions, it becomes clear why the installation of a perfect utterance to replace an imperfect one must needs require an equal amount of persistency and repetition.

5. Delayed speech and its causes

Study of early normal utterance offers many points of departure for attack upon speech disorder in the kindergarten and the early grades. For that reason it has been treated somewhat at length, but it is time now to turn to our more immediate subject and to deal with some of the most common disorders found among children from two to five years of age.

Delayed speech is one of the most frequent deviations from the evolution of normal talking. By "delayed speech" I do not refer to a deficiency caused by feeble-mindedness; I assume a

normal brain background. Delay in speech is mostly due to environment. It is found in the silent home where the parents talk little to the baby and little to each other. It results where the baby is set down for many hours alone. It may also result from great speed of conversation, with little effort to utter individual words distinctly, to use small words, or to name things to the baby.

All this is quite natural. The same thing occurs with the eye. Where the stimuli are absent the function fails to evolve. Touch and discriminations of touch are atrophied similarly through lack of use. Delayed speech is really undeveloped because unstimulated speech.

Treatment of normal children who are backward in speech development consists in encouraging the child by going through the steps mentioned above in treating the development of simple speech.

6. *Early speech defects and what they lead to*

The defects observed in kindergarten are most frequently not quite the defects that appear later. Consonants are likely to be slightly off the standard. Words are sometimes mispronounced. Syllables are omitted. Grammar is wrong. All these minor matters are less defects than imperfections.

They show an effort at producing what has been heard, but the output is a little incomplete.

Minor matters like these may be massed together and treated by constant repetition of the correct forms. When, however, one comes upon such things as lisping and the absence of consonants, he should realize the presence of a real defect likely to lead to a permanent disorder. One's chief reliance, during these early years, in correcting defects, should be more than anything else upon imitation in sound. The ear of the normal child is very acute. It quickly apprehends the difference between a correct utterance and its own faulty pronunciation; it has the faculty of trying this and that sound until, by experiment, it hits upon the correct utterance. Therefore, one should begin with the faculty of imitation and resort to detailed instruction as to mouth positions only after it has failed. Any one can see that instructions about mouth position are uninteresting to little people. They should, therefore, be used only as a last resort.

It is easy to advise the use of the imitative faculty. What one should know about the method in teaching is more complicated than at first appears. An analysis of imitation and its processes resolves the method into a systematic develop-

ment of hearing, a continuous drill of sound repetitions, and a building-up of brain cortical areas that differentiate between different sounds. So that in the pedagogical use of imitation we must have not only a way of developing sensory perception, but a method of developing the recollection and interpretation of stimuli, together with more or less collaboration upon them. There must also be an attempt to correlate the external speech mechanism with all this new mental acquisition. This can be accomplished only by numerous guesses, miscalculations, and trials, until finally the heard, registered, and remembered sensation is uttered as heard. Many infantile speech disorders may be very quickly corrected if their treatment is made into a game and the child is rewarded for attaining the desired end.

Exact position coördination in the mouth may be resorted to if the above attempt fails. When this method is undertaken, the first sounds to be taught are those that are made in the front of the mouth, such as *m*, *p*, and *b*. Then take up those that are made a little farther back in the mouth: *n*, *t*, and *d*. *S*, *l*, and *r* may naturally follow, or they may be preceded by *ng*, *k*, and *g*. Then the order matters little: *sh*, *ch*, *z*, *th*. Some of these back sounds are difficult to teach. They

can be acquired easily by imitation. To teach the front sounds is sometimes quite easy, sometimes quite difficult.

Stuttering in the early years is unusual. Sometimes it may be eliminated by proper rest and hygiene; more often it may be cured by change of mental environment for two or three months; sometimes it may be eradicated by creating a more genial atmosphere in the home so that the child's mental processes are not interfered with. Aside from these attempts at individual treatment, the same visualization processes should be inaugurated in the kindergarten that were mentioned above for older children.

Delayed mentality may have an associated speech retardation. The speech of the idiot, the imbecile, or the moron makes their diagnosis by the expert a very easy matter. If of low grade and with marked speech defect, they are institutional cases and should be removed. If of the middle grade, with mild speech defect, they should be consigned to the special class where mental defectives are gladly received. If on the other hand they are slightly lacking in mentality, they may be retained, and final disposition made of them later in the grades, when their capacity for progress has been more definitely determined.

7. Special methods in individual cases

It is hard to give general rules that can be applied automatically to individual cases. The teacher's information should be sufficiently wide and diverse to enable her to deal intelligently with individual cases as they arise. It will be well, however, to discuss here one or two special cases.

Excessive haste in speech is simply one phase of great mental activity which overflows also in excessive bodily motions and in constant twitchings. This great speed of utterance requires special care. In this special type of speech defect, insistence on slow utterance, modulated expression, and the production of exact sounds with a long breath, brings out the proper enunciations almost every time. This makes it clear that we are not dealing in this case with defective pronunciation. The whole fault lies in the excess of speed. Another approach to the cure of such cases is needed. Experience shows that the use of a series of slow, controlled, evenly executed, gymnastic movements results in almost immediate improvement. These cases should be put through a system of calisthenics of this sort, being made to practice for fifteen minutes three times a day, for two or three months. I have

seen cases that have been cured almost entirely by this simple procedure, with hardly a reference to the external speech mechanism and with no hint of imitation.

Other puzzling cases are somewhat like the following one: A case of marked phonetic defect appeared. The defects were numerous. It was found that clear English was spoken in the family. The ear was suspected as the seat of the trouble. When the ear was examined — and I refer here to the mental ear, like the mind's eye — several marked defects showed up. The child could not sing the scale or appreciate tones, harmonies, and melodies, and there was no ability to differentiate between two notes.

This may illustrate some of the most puzzling cases that a teacher is called upon to undertake, and it may open the way to curative methods which should be applied primarily to the ear rather than to the talking apparatus at the other end of speech.

The method of procedure in a case like this is to train the ear, first to sounds with large differences, then to sounds with smaller and smaller differences. The varieties of sound here referred to should be varieties in pitch, intensity, vowel form, and consonant execution. Phonetic ear de-

fects last a long while; one may have to train a case of this sort for a year or two, but such training is the only method by which a proper nervous output can be attained. This long, tedious drill is profitable, however, in other ways. It enables the patient to stand higher in spelling and writing and in school music than would be possible under other circumstances.

One might cite innumerable complicated cases, such as these. Every case differs from every other. Let what has been said suffice to show that numerous methods have to be resorted to in order to build up the background of perfect speech.

8. Danger of leaving defects to be "outgrown"

Criticism is rife in these days. Many people are willing to criticize but few are willing to do actual work in eliminating speech disorders. Criticisms of speech instruction are numerous in their forms and their follies. From among them all, I have chosen one that will often come up in discussions of the school curriculum and which may frequently be offered even by the physician. Many people say: "Leave the case alone and it will outgrow its defect." No treatment could be more foolish than this. No advice could be more

ill-advised; no suggestion could show more ignorance of the problems of speech. Such advisers are ignorant of the harm they are doing and of the amount of mental drill of which they are depriving the pupil. Nor do they know at all whether or not these cases will ever "outgrow" their defects. In brief, this advice is without foundation, without scientific backing, and should never be followed. It really means, "I don't know," and should always be so translated. Granted that a few defects are outgrown. They would have been overcome more quickly and would have acquired greater speech excellence under training than by leaving the matter to time. Moreover, no one knows whether a given defect, as seen in a child, will be outgrown or not.

9. How to raise the speech standard in the classroom

Individual methods of attack have been described in some detail, but there are still other ways in which the general level of speech excellence can be improved throughout a kindergarten class as well as in the elementary grades. I would advise that the class be put through a daily or perhaps twice daily series of vocal drills in unison. This trains the ear, improves the memory for

sound, and gives a little enunciation drill. It gives the class a sort of stability and unity, as music does, and sets a vocal standard that is apt to be imitated and followed by all the members.

Programs for such exercises might be outlined somewhat as follows :

Exercise 1. Ah, a, e, aw, o, oo. Directions: Repeat this series of vowels one after the other in the order given, on three notes of the scale.

Exercise 2. Ah, a, e, aw, o, oo. Directions: Repeat in series as above going up the scale and down on each vowel.

Exercise 3. Ah, a, e, aw, o, oo. Directions: Repeat each vowel with a modulation of intensity. That is, begin very lightly, increase the intensity to the maximum, and then gradually return to the original lightness and softness again. Do this on each vowel.

Exercise 4. Repeat the words, "Papa, obey me" — "to dinner" — "cow going." Directions: Repeat the directions that are given under Exercise 1. This will give a drill on the nine consonants and also allow for the use of the vowels in the above series at the same time.

Other exercises might be as follows, to include practice on all the consonant sounds. Copious prepronunciation by the teacher is necessary. Also much individual drill. The grouping may be made according as each teacher may fancy.

CONSONANT PRACTICE LIST

p	pa	ap	pat	paper
b	ba	ab	bat	baby
m	ma	am	mat	tame
t	ta	at	tan	taper
d	da	ad	dog	duty
n	na	an	Nan	tan
k	ka	ak	kite	kitty
g	ga	ag	gone	gutter
ng	nga	ang	angst	ring
sh	sha	ash	shall	ashes
ch	cha	ach	chat	church
z	za	az	buzz	fuzzy
l	la	al	let	bell
r	ra	are	run	roar
s	se	es	seen	saucy
f	fa	af	fat	after
v	va	av	vat	have
th	tha	ath	thin	with
h	ha	ah	hat	heater
wh	wha	white	what	wa-wa
w	wa	aw	water	we
j-dz	ja	aj	jump	judge

10. Value of correct early standards

The value of ideal standards to start with can hardly be over-estimated. They cannot be estimated at all by those who take the narrow view of speech defects. Their value is appreciated only by those who hold the tenet, "The boy is father to the man," or, as Pope puts it, "As the twig is bent the tree 's inclined."

This matter has been mentioned repeatedly in these pages, because it deserves repetition. The special teacher of speech improvement can do nothing better than to implant proper standards early, to place the young mind in the correct paths and keep it there until it follows them habitually, never allowing any lax and slovenly relapse, *à la* Montessori, with the hope that early faults are easily outgrown.

Correct early standards at once set the young mind in the right path. Their repetition and enforcement keep it there until it chooses for itself what is ultimately and permanently right.

Correct early standards relieve the teacher of much later patchwork. They instill a better discipline in the class. They give an atmosphere to a schoolroom which a superintendent feels immediately on his arrival, which conquers and pervades and guides the newcomer into the class, which visiting teachers admire, and which is a comfort and a relief to the teacher herself who has charge of the room.

VI

SPEECH DISORDERS AMONG ABNORMAL CHILDREN AND HOW TO TREAT THEM

In recent years we have discovered[1] the possibility of improving the speech of the mentally defective — the idiot, the imbecile, the moron, and the mental defective generally. These backward members of the school grades who are relegated to so-called "special classes" for instruction suited to their peculiar needs, these deficient mentalities, have lately been approached phonetically and vocally by a new method of drill with surprisingly good results. One mental expert has said that these individuals should derive as much benefit from the right sort of vocal drill as they have from the industrial drill already so successfully in use. My own experience has convinced me that even more is possible.

1. Speech forms among the feeble-minded

Although the speech externalization of the feeble-minded is extremely various, it is possible

[1] This discovery was first published in an article as follows: By Walter B. Swift. "The Development of a Mental Defective by Vocal Drill," *Boston Medical and Surgical Journal*, vol. CLXXIII, no. 20, pp. 745, 746, November 11, 1915.

to devise a rough classification sufficient for practical purposes. Such a classification would divide speech forms among the feeble-minded into three classes: marked, medium, and mild.

Marked feeble-mindedness shows itself in forms of speech very deficient for the age of the individual in whom they are found. One finds children, for example, and even adults, who can utter only a few words, or possibly none. In general, the speech may be described as monosyllabic and limited to a very few words. This is the speech condition of the idiot.

Medium feeble-mindedness presents a speech condition somewhat more developed. Imbecile speech usually comprises a number of monosyllabic words in addition to a good many short sentences. No very complicated mental conception is possible to the imbecile, however, and accordingly the long and intricate sentence is not found.

Mild feeble-mindedness is characterized by speech often scarcely distinguishable from that of normal individuals. Speech intake and speech output areas may be fairly well developed. The moron can repeat what he has heard and is sometimes able to make a good impression in conversation. He fails, however, in the collaborative

processes — complicated thinking, deep comprehension, complex reasoning.

2. Speech in the mental defective

By the term "mental defective," used in contradistinction to the three terms employed above, I here refer to the individual with special and minor defect. Where the sense of hearing is lacking, for example, or the ability to interpret sounds that are heard, the sensory defect may prevent proper utterance. A defect of the eye preventing correct registration of sight sensations and the making of correct visual images may cause another form of speech disorder which externalizes itself in interrupted or pumped conversation. Again, a moral defect may cause the speech to be harsh, rasping, and hasty.

3. The basis of abnormal speech

No doubt there is always a pathological background for defects of speech, but the study of these is of little value for the teacher. Pathology of the brain can be studied only in the dead subject. After one knows the dead case well, he cannot be certain that another subject, still living, is exactly like it. Accordingly, he cannot

proceed from exact pathological findings to exact educational methods. In education, however, we deal with the living individual and can instill and develop absent functions. If we knew much more than we do about the brain pathology causing defective speech, that knowledge would be of little practical service, except, perhaps, that it might cause us to proceed more energetically with our educational processes, forcing the development of functions in localized brain areas whose presence we might suspect.

That the study of function alone is often sufficient may be illustrated by a certain investigation which I once made in a Berlin laboratory. I was engaged in studying a dog that could not differentiate between two tones. On the basis of this lack of function I maintained that the fibers and cells which should have performed that function had been extirpated. My critics objected that this assertion could be proved only by autopsy. The professor under whom I was working answered that the functional absence was sufficient proof upon which to base the assertion of pathological absence. Just so, functional absence in abnormal speech is a sufficient basis upon which to build a system of phonetic training.

4. Normal phonetics not suited to treatment of abnormal minds

In the early days, all abnormal mentalities were treated in the regular grades of the schools, it being thought that they would improve under the same kind of instruction that was given to normal children. The result was a retardation of the classes in which they were found — a retardation that increased as they passed farther along in the grades until it became intolerable and the school authorities concluded that the methods of education for normal and for abnormal children would have to be differentiated. From this conclusion sprang the special classes. Their persistence and existence to-day show the correctness of that conclusion.

The original situation exists to-day, however, in the meager approaches to the speech disorder problem attempted by vocal teachers in the public schools. They began by the imposition upon abnormal minds of a phonetic treatment adapted only to normal minds. Their lesson has not yet been learned. The lesson is that ordinary phonetics is no more applicable to abnormal minds than our ordinary school curriculum is applicable to abnormal minds.

The regular grade work, suited to the normal child, has been replaced by industrial drill for the abnormal child. Why, then, should we expect that phonetics intended for normal children will serve just as well for the abnormal? The difference between phonetics for the normal and phonetics for the abnormal should be as great as that between the ordinary grade school curriculum and industrial drill.

Understanding of this matter explains many apparent failures in the vocal training of abnormal children. I have repeatedly heard teachers say: "I teach the boy to pronounce a sound correctly, and then the next day he has forgotten all about it. I have done this over and over, and have come to the conclusion that it is impossible to teach him proper pronunciation." The difficulty is that the wrong sort of drill has been applied.

5. *Mental background assumed in normal phonetics*

For the sake of contrast, it will be well to say a word about the psychological background of speech in normal minds. Normal speech subsumes a series of normal nerve functions. The sensory intake areas of the brain — those of eye,

ear, mouth, feeling — are all intact. Above these are adequately developed sensory word combinations, psychic seeing, position sense, and interpretation areas. Still higher, there are normal collaborative processes, such as imagination, memory, reason, visual recall. On the motor side are the higher motor control areas, which by certain delicate motor processes control the lower motor output areas and result externally in speech. This is the whole round of the speech mechanism. The functions of all these areas compose the mental background that we assume in normal phonetics.

6. Actual mental backgrounds in abnormal minds

The contrasts here are extreme. Abnormal minds present lack of function in any or all of the different parts of the speech mechanism just mentioned. For example, there may be faulty, or even absent, sensory intake in the lowest type of idiocy. In imbecility there may be fairly good intake, with no functional interpretation. In the moron, there may be deficient collaborative processes — reasoning, comprehension, imagination. The motor output side may correspondingly lack because the sensory side cannot furnish enough stimuli for its growth. These functional defi-

ciencies may depend upon pathological deficiency or absence of fibers and cells of the cortex. This, however, is not the present question.

Phonetics for the abnormal, following the example of industrial drill, should begin with those functions which the abnormal mind actually possesses. There should be a means of ascertaining just what these functional activities are and just what the vocal capabilities of the individual under treatment actually are, no matter how simple these may be.

After the mental level has been discovered, the procedure should not be rapid or difficult. I begin my own cases by drilling them a long time upon those things which they can already do, before passing to the development of functions which examination has shown to be absent. We have to build upon what a man can do, no matter how little that is, until the function in question enlarges of itself its own scope of activity — shows in its speed and variety of action that it has taken on new powers and new capabilities. Then, and not till then, should the training be carried farther. The whole procedure should be carried on in this way, step by step.

7. *Physiological basis for the treatment of mental defectives*

Nature never presses little children beyond their capabilities. In their first years, they reach for and touch things and take in gross sensations. Later, they interpret this mass of sensory intake and build up an understanding of life's processes. In still later years comes the development of collaborative processes.

Early in this infantile evolution, and corresponding to it, speech usually puts out on the plane at which the child has arrived those vocal expressions which indicate that plane. This vocal expression makes a pretty exact externalization of the mental evolution which has just preceded.

Processes like these furnish the model for procedure in methods of educational development. The normal speech of children, developing along certain definite lines from the simple to the more complex, gives a hint of method that should be accepted as guide in the successive steps undertaken by the teacher in the slow processes of speech development in the mentally feeble.

It should be clear, then, that we must start with the physiological basis which we find present; that we should emphasize, amplify, and en-

large this; that, as the growth or power advances, we should take the hint and develop those functions that naturally show up to the maximum of efficiency, until the entire speech mechanism begins to function perfectly. As contrasted with the application of normal phonetics, this is a slow process. It has to build up the necessary parts of the speech mechanism before it tries to make that mechanism work correctly.

8. A system of phonetic drill for abnormal children

Before the drill is begun, the vocal history of each of the pupils must be completed. Then there should be a vocal examination to determine what sounds and words the pupil is capable of uttering and to discover the general and particular defects of speech to which he is subject.

Lesson 1. Repeat before the pupil the words and sentences which he is himself able to pronounce most readily and correctly. This should be done three times a day for a week or more, during periods of fifteen minutes.

Lesson 2. During Exercise 1, note whether any new mental capacities are brought to light. If so, concentrate upon these, one by one, developing each as far as possible. This may require six months, or more.

Lesson 3. After it seems certain that all the functions have appeared and have been developed as far as possible, then assign a series of vowels, such as *ah, a, ee, au, o, oo.* Have the pupils repeat these by ones, then by twos, then by threes, and finally all together. Continue until all the vowels are correctly pronounced in series.

Lesson 4. Add to the above vowels the consonants which the pupils can already pronounce. Have these repeated several times a day for three weeks.

Lesson 5. Try to teach the pronunciation of a new consonant or two, and have these added to the vowel series.

Lesson 6. Passing from the known to the unknown, as above, devise similar exercises with small words, then with long words, and finally with short and long sentences.

9. Remarkable progress of some cases

It may assist and encourage the teacher to enumerate a few actual cases which have come under the author's observation during his use of a method of drill similar to that just outlined. These cases will illustrate the method and, at the same time, show its efficacy. A few will suffice. I shall present one from each of the three large classes already mentioned above, — idiot, imbecile, and moron, — with one or two from the class of special mental defect.

It should be said that occasionally one has to acknowledge defeat in this field. Sometimes one sees but little progress as the reward for hard labor. Surprising improvement and permanent personality changes are the rule, however, in most cases.

The degree and kind of improvement in speech and mentality which may be expected to result from treatment is shown in the following short outlines of typical cases: —

Case 1. Diagnosis: Marked mental backwardness. Before treatment, this boy sat alone at home, doing nothing. His speech consisted of a few grunts and the words "Mama" and "Papa." In the garden he never used the paths, but walked indiscriminately upon flower beds and plants. Distance from the city prevented completion of drill, but the boy's speech is now much clearer and he has several monosyllabic words. He is now careful to use the paths in the garden, he follows his father about the house and imitates him at work, and he has several other minor interests.

Case 2. Diagnosis: Imbecile. The most painful feature of this child's case before treatment was begun was the fact that she was constantly in motion, incessantly turning and twisting. Fur-

thermore, she was very destructive. Hence her mother was ashamed to take her out of the house. She seemed observing, but she had an extremely small vocabulary. This case was given treatment for over a year. The girl now uses many words and is able to put them together into very simple sentences. Her behavior is now quiet and well controlled. Those who know her say that she has undergone a wonderful change in matters of observation, understanding, mimicry, and expression.

Case 3. Diagnosis: Moron. Before treatment, this boy spent all his time at home, having no interest in sports or in other boyish activities. He had no friends. He was treated with the special vocal drill, in a more elaborate form than that presented above, and in about four months showed marked mental improvement, and improvement which his mother characterizes as "a tremendous change." He now has numerous friends, he plays baseball and football, and he attends the "movies" and social functions.

Case 4. Diagnosis: Special mental defect. I have described this case fully in a recent article.[1]

[1] "The Development of a Mental Defective by Vocal Drill," by Walter B. Swift, M.D. *Boston Medical and Surgical Journal*, vol. CLXXIII, no. 20, p. 746. Reprints gladly sent upon request.

It may be summarized thus: A case of defective mentality was subjected to intensive vocal drill for eight months, with the result of remarkable and unexpected mental development, showing in new initiative, wider interests, extended observation, and minor manifestations.

Case 5. Diagnosis: Backwardness in school. This boy showed little interest or progress at school. He had, indeed, few interests of any sort outside of his home. His speech was indistinct, monotonous, lacking in flexibility, but he did not stutter. He was given about six months of vocal drill, with the result that his speech is now clear and flexible and correct. He is interested in school work and is making what is called "wonderful" progress. He is an apt story-teller and plays much with other children. Almost all signs of mental backwardness have been eliminated.

All I can hope to do in these bare outlines is to focus attention upon the fact of mental development under vocal drill. I hope to present these and other cases in greater detail in a later volume. At present, I am not seeking to gain for this new method the credit it deserves. I shall be content if what I have said leads others to try out the method for themselves. Seeing is believ-

ing, and it is only fair to say that some of the results which have been attained can be believed only by those who have seen them. Critics of the method, therefore, should not content themselves with hearsay or with even such a report upon the work as has been here given. They, too, should see the work and the results with their own eyes before they speak in praise or blame.

OUTLINE

I. IMPORTANCE OF GOOD HABITS OF SPEECH

II. METHODS OF CORRECTING DEFECTS OF SPEECH

III. THE ELIMINATION OF MINOR SPEECH DISORDERS

IV. HOW THE TEACHER MAY ACQUIRE A PROPER STANDARD OF SPEECH

V. SPEECH IMPROVEMENT IN KINDERGARTEN AND ELEMENTARY GRADES

OUTLINE

VI. SPEECH DISORDERS AMONG ABNORMAL CHILDREN AND HOW TO TREAT THEM

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